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OXFORD TRAINING COURSE IN CLINICAL PSYCHOLOGY

**Developing a Theory of the Emotional  
Impact of Auditory Hallucinations:  
An Exploratory Study.**

by

**Helen Close**

**Submitted in part fulfillment of the BPS Doctorate in Clinical  
Psychology.**

*Date of award 10<sup>th</sup> September 1996*

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## **ABSTRACT**

This research examines recent developments in the cognitive model of auditory hallucinations ("voices") in people with psychoses. Following the research of Chadwick and Birchwood (1994), data are presented on the behavioural, cognitive and affective responses to persistent voices of thirty participants with psychoses. After testing the reliability of their interview, data is then compared to that of the Chadwick and Birchwood (1994) sample. In addition, the research aimed to develop the cognitive model of the emotional impact of voices by examining further possible associations with participants' self-evaluations, hypothesising that these evaluations are associated with the affective response.

The cognitive assessment of voices shows reasonable inter-rater and test re-test reliability. Compared to the Chadwick and Birchwood (1994) sample, the present sample had a greater proportion of negative affective responses to voices, regardless of their beliefs about the voices' benevolence or malevolence. Participants in this sample were less likely to endorse the voices' omnipotence or omniscience. Similarities were shown in behavioural responses and factors reported as proof of the voices' potential power.

Although it was not possible to explore the associations between the content of voices, affective responses, self-evaluations and distress due to a preponderance of negative affective responses in this sample, nevertheless, it was possible to describe these responses. Participants in this sample had a predominantly negative content to their voices. Those who were able to access a personal meaning were found to have, predominantly, negative personal meanings, low self esteem and moderate distress as measured by standardised instruments.

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**SECTION 1**  
**INTRODUCTION**

## **1. INTRODUCTION**

### **1.1 AREA OF INVESTIGATION**

Whilst the recent interest in cognitive behavioural therapy techniques for psychotic disorders (e.g. Fowler & Morley, 1989; Birchwood & Tarrier, 1992) has led to favourable outcomes for certain symptoms, it seems that auditory hallucinations remain resistant to such techniques. This dissertation sets out to examine recent developments in cognitive behavioural assessments of auditory hallucinations ("voices") in people with psychoses. It aims to extend innovations in order to understand further the emotional impact of voices for people with a psychotic disorder. In addition, it seeks to examine further possible links between auditory hallucinations, their personal meaning, and the congruence of this with a person's view of themselves, hypothesising that self-esteem is an important factor in determining the affective response.

### **1.2 OVERVIEW**

By way of introduction, psychotic symptoms will be discussed explicitly in relation to the classification of schizophrenia. The usefulness of this classification will be debated before exploring the paradigm shift to the study of single symptoms of psychosis.

Auditory hallucinations or "voices" will be described in detail. The need to develop psychological treatments and theories for voices are discussed in relation to the restricted effectiveness of both pharmacological and psychological treatments to date. It is argued that the distressing nature of such symptoms calls for a re-examination of our theoretical understanding of voices. Possible cognitive processes implicated in voices are described including the cognitive-neuropsychological, the need to make sense of unusual experiences, and the cognitive-behavioural approach which emphasises the importance of beliefs about voices and their emotional significance. Of these models, it will be argued that it is the cognitive-behavioural one that holds promise for understanding the distress that voices can cause.

Current psychological treatments for voices will be briefly examined, highlighting their restricted effectiveness. This has directed research back to the cognitive-behavioural model to explore further the emotional impact of voices (see Chadwick & Birchwood, 1994). Within cognitive-behavioural theory and therapy the importance of assessment is emphasised, and the assessment of the voice experience is discussed. This leads to a critical evaluation of recent relevant research.

Such critiques form the basis of the current research. The aim is to replicate the research of Chadwick and Birchwood (1994), and to examine further the importance of the personal meaning that the voice activates. Personal meaning is a central component of cognitive-behavioural theory, and the role of self-esteem in the voice experience has not been thoroughly investigated to date. Finally, the aims and hypotheses of the study are set out.

### **1.3 The Concept of Schizophrenia**

Traditionally, psychotic symptoms have been deemed of interest for their association with a particular diagnosis whether schizophrenia, depression or mania (Persons, 1986).

The term schizophrenia was first coined by Bleuler (1911). It was a renaming of Kraepelin's "dementia praecox" which distinguished itself from the manic depressive psychoses due to its earlier age of onset and chronic deteriorating course. This distinction has informed most subsequent attempts at psychiatric classification (see Boyle, 1991) which has in turn impacted on both biological and psychological research into psychosis (Bentall, 1996). The implication of this method of classification is that patients should be studied according to diagnostic grouping, despite the diversity of their psychotic features.

This has fuelled the controversy over the diagnosis of schizophrenia. Researchers have argued that it should be abandoned (Bentall, 1990; Boyle, 1990), due to the scientific limitations of both its reliability and validity (Bentall, Jackson &

Pilgrim, 1988; Bentall, 1992a, b). The arguments can be summarised as follows: Despite the use of operational criteria (e.g. the American Psychiatric Association's Diagnostic and Statistical manual of Mental Disorders: DSM-III-R; APA, 1987), there is still disagreement between clinicians diagnosing patients (Brockington, Kendall & Leff, 1978; Farmer, Jones, Williams & McGuffin, 1993; McGuffin, Farmer & Harvey, 1991) which leads to questions as to whether schizophrenia is a reliably identifiable syndrome. Further questions relate to the validity of its distinctiveness, with similar clusters of symptoms occurring in normal subjects (e.g. Bentall, Claridge & Slade, 1989) leading to suggestions that the symptoms lie on a continuum with normal functioning with psychotic experiences at the extreme end of the continuum (Bentall, 1996). Further, the diagnosis has proved a poor predictor of outcome, response to treatment, or aetiology (Bentall, 1996).

This has led these and other authors to argue that research should be directed to the study of individual symptoms of psychosis. This may be more informative with regard to the underlying psychological processes involved (Persons, 1986; Bentall *et al.*, 1988; Bentall, 1990).

#### **1.4 The Symptoms of Psychosis: Positive and Negative Symptoms**

So called "positive" symptoms refer to the symptoms of psychosis which consist of delusions, hallucinations and thought disorder. They are called positive because they are viewed as pathological by their presence, as opposed to the absence of some aspect of functioning that characterises "negative" symptoms such as, flatness of affect, poverty of speech, apathy, inattention, and social withdrawal (Cutting, 1985).

In accepting the rationale that individual symptoms of psychosis should be studied, this research focuses on the symptom of auditory hallucinations.

### 1.4.1 Auditory Hallucinations

Slade and Bentall (1988) provide a working definition of hallucinations as:

any percept-like experience which (a) occurs in the absence of an appropriate stimulus, (b) has the full force of the corresponding actual (real) perception and (c) is not amenable to direct and voluntary control by the experiencer (p. 23).

Although hallucinations may occur in a number of modalities including visual, tactile and olfactory, auditory hallucinations tend to be the most common with estimates ranging from 60 per cent (Slade & Bentall, 1988) to 73 per cent (World Health Organisation, 1973) of in-patients with functional psychoses and a diagnosis of schizophrenia respectively.

Auditory hallucinations tend to be extremely disturbing psychiatric symptoms (Sartorius, Shapiro & Jablensky, 1974) which although traditionally associated with a diagnosis of schizophrenia, have also been found to occur in a wide range of organic and emotional states and also in states of toxicity. Indeed, because they feature in many different disorders, the importance of auditory hallucinations in differential diagnosis has been doubted (Asaad & Shapiro, 1986). The fact that they have been reported in non-clinical groups has directed current psychological opinion toward accepting the possibility that auditory hallucinations lie on a continuum with normality (Strauss, 1969; Bentall, 1996).

The auditory hallucination itself can range from noises, to words, conversations and singing. "Voices" are defined as auditory hallucinations of verbal communication (Chadwick, Birchwood & Trower, 1996). This is the most common form of auditory hallucination and both researchers and service users often prefer the phrase "hearing voices" as opposed to auditory hallucinations (e.g. Chadwick *et al.*, 1996; Romme & Escher, 1989). In this research, "voices" will predominantly be used for consistency and because of the interest in the verbal content of the voice and its meaning to an individual. However, where reviewed research is not explicitly referring to voices, the term auditory hallucination will be used.

## 1.5 Why Develop a Theory of Voices: Clinical Relevance of Investigation

The role of both clinical psychology and psychiatry is to alleviate symptoms that cause distress for our clients. Clinical and empirical evidence has suggested that auditory hallucinations can be distressing (Breier & Strauss, 1983; Garety & Hemsley, 1987) and disabling (Harrow, Rattenbury & Stoll, 1988). However, neither pharmacological nor psychological treatments for auditory hallucinations have proven fully successful.

Advances in neuroleptic medication have led to significant improvements in the management of psychotic symptoms. However, a sizeable proportion of psychotic patients do not respond to medication at all (Brown & Hertz, 1989) and a significant proportion of patients with psychotic illness experience persistent positive symptoms resistant to medication (Garety, Kuipers, Fowler, Chamberlain & Dunn, 1994). Rates of drug-resistant florid psychotic symptoms were 23 per cent in a seven-year follow-up study (Curson, Barnes, Bamber, Platt, Hirsch & Duffy, 1985) and similar rates have been reported among in-patients (Curson, Patel, Liddle & Barnes, 1988). Further, up to 42 per cent of people will relapse whilst in receipt of medication (e.g. Macmillan, Crow, Johnson & Johnstone, 1986) with each relapse increasing the probability of residual psychotic symptoms (McGlashan, 1986).

In addition to these distressing and disabling symptoms, affective symptoms are found in 25-40 per cent of those with psychosis (Johnstone, Owens, Frith & Leavy, 1991) and the risk of suicide is increasingly recognised (Briera, Schreiber, Dyder & Pickard, 1991; Hirsch, 1982). The cost of these persistent symptoms in terms of lost individual potential, family burden and service use is thus very great (Garety *et al.*, 1994).

Psychological interventions for psychotic symptoms have some proven efficacy particularly for delusions (e.g. Garety *et al.*, 1994) but are less encouraging with regard to voices. The psychological approaches used to treat voices were originally very crude, both theoretically and in their clinical application (e.g. Lindsley, 1959; 1963). Whilst the last decade has seen an increase in more sophisticated

cognitive techniques using coping strategies (e.g. Tarrier, 1987) and belief modification (e.g. Fowler & Morley, 1989; Chadwick & Birchwood, 1994) the results are still not particularly encouraging, subject numbers are low and there is relatively little in the way of long-term follow-up.

The most encouraging research to date has focused on patient's beliefs about their voices (Chadwick & Birchwood, 1994; Haddock, Bentall & Slade, 1996). Chadwick and Birchwood (1994) use a cognitive model to understand voices and the emotional and behavioural response to them. They acknowledged the importance of the underlying beliefs about the voices and relate this specifically to beliefs about the identity, power and purpose of the voice. However, the cognitive model emphasises the importance of the self-concept that arises from early experiences (e.g. Beck, Shaw & Emery 1979).

A number of researchers have advocated the importance of the self-concept in understanding psychotic symptoms (e.g. Davidson & Strauss, 1992; Chadwick *et al.*, 1996). For example Bentall (1994) has argued that paranoid people use an extreme form of the self-serving bias to preserve vulnerable self-esteem. The role of the self-concept in voices has not been explicitly examined to date. It is argued that this area would benefit empirical examination to further understand the emotional impact of voices.

This research examines the possible links with the core beliefs about the self, or the underlying personal meaning, that voices activate within a person. It is hypothesised that the congruence between the personal meaning activated and a person's self-concept may be an important factor in determining the affective response. If successful, this theory could then be tested and could subsequently inform psychological treatments by focusing on this aspect of a person's psychological processing.



## **1.6 Models of Auditory Hallucinations**

### **1.6.1 Introduction**

To date, there is no cognitive model that explains the occurrence of auditory hallucinations that has been fully supported by research evidence. This next section will examine different types of cognitive models that are relevant for auditory hallucinations.

### **1.6.2 Cognitive Neuropsychological Models**

Cognitive neuropsychological theories provide a basis for developing new insights into how biological impairment could give rise to psychotic experiences. The theories are highly speculative but, are at least consistent with existing evidence that biological factors may have an important influence on psychosis (see Frith, 1992). Whilst cognitive-neuropsychological theories provide no definitive answers, they may provide insights into the nature of the problems experienced by people with psychosis.

Regarding auditory hallucinations, authors have attempted to explain these by suggesting that they are internal cognitive events that are misattributed to an external or alien source. Support for this comes from findings that auditory hallucinations are accompanied by subvocalisation or micromovements of the speech muscles (Gould, 1950; Inouye & Shimizu, 1970), which also accompanies normal thinking or inner speech (McGuigan, 1978). It would further explain the finding that verbal tasks that block subvocalisation also inhibit the occurrence of auditory hallucinations (Margo, Hemsley & Slade, 1981; James, 1983; Gallagher, Dinan & Baker, 1994).

Whilst there is some agreement about the links between inner speech and auditory hallucinations, there is debate regarding the mechanisms that cause such experiences to be misattributed.

Hoffman and colleagues (Hoffman, 1986; Hoffman & Rapaport, 1994) have suggested that hallucinating patients have linguistic information stored in long-term

memory which at times, disrupts language production processes and creates verbal messages which are consciously experienced as alien. They call these unintended messages "parasitic" memories and suggest that the messages are variants of ordinary inner speech.

Frith (1987, 1992) however, has argued that the problem lies in the patients' failure to recognise that inner speech is self-initiated, due to deficits in an internal monitoring mechanism that regulates inner speech. The result is a dissociation between willed or planned intentions and action. He suggests that, if the hallucinations were associated with inner speech, then the problem is not the occurrence of inner speech (as this occurs in normal mental processes), but the failure to recognise that it derives from internal intentions. Support for this model was reported by Frith and Done (1989) who found that those with a diagnosis of schizophrenia performed less ably than normal controls in correcting errors on a computer task, interpreting this under performance as due to faulty internal monitoring.

### **1.6.3 Hallucinations as Misinterpretations of External Events**

Bentall (1990) similarly proposed that a hallucinator's tendency to misattribute internal events to an external source reflects a deficit in monitoring internal events. Instead of attributing this kind of error to a defect in a hypothetical neuropsychological mechanism, he argues that this may be influenced by a person's beliefs and expectations about what events are likely to occur, together with specific (perhaps neuropsychological) deficits in the ability to discriminate between internal and external events. The reinforcement processes (particularly anxiety reduction) may facilitate the misclassification of certain kinds of internally generated events (e.g. negative thoughts about the self) as externally generated. This was supported by research showing a greater tendency for hallucinators to attribute words they had generated to an external source (i.e. the experimenter) (Bentall, Baker & Havers, 1991) especially if the material was negative (Bentall, Baker, Kaney & Bowen-Jones,

1995). Additionally, an experiment showing that hallucinators are more influenced by suggestions to hallucinate (Young, Bentall, Slade & Dewey, 1987) provides further evidence that beliefs and expectations influence hallucinations.

One implication of these findings is that patients might be taught to re-attribute their voices to themselves. If it is the case that patients' misattributions of their thoughts to an external source reflect their beliefs and expectations (at least in part), then focusing on these beliefs and expectations may be of therapeutic value (Bentall, 1996). This approach has been adopted by Bentall and his colleagues (e.g. Haddock Bentall & Slade, 1993, Bentall *et al.*, 1994) and may involve helping the patient to become aware of their bias towards hearing ambiguous sounds as if they were voices.

Models such as Frith's and Hoffman's are helpful in attempting to make sense of how neuropsychological dysfunctions give rise to psychotic experience. Bentall (1990) introduces the importance of expectations and beliefs about what events are likely to occur. Whilst this may go some way to explain the apparently meaningful content of voices for an individual, to understand this more fully, it may prove more beneficial to consider the relationship between emotions, beliefs and behaviour, and how they interact with voices.

#### **1.6.4 The Importance of Beliefs and Emotional Significance of Voices**

Studies have suggested that the experience of voices may be shaped by complex beliefs a person holds about his or her voices and the emotional significance of the voices to the individual (Romme & Escher, 1989; Benjamin, 1989; Chadwick & Birchwood, 1994). A person's understanding of his or her hallucinatory experience, and the emotional significance of it, often appear to be related to complex beliefs about their nature and content (Fowler, Garety & Kuipers, 1995). Romme and Escher (1989) studied hallucinations in both clinical and non-clinical groups and highlighted a range of beliefs commonly associated with the hallucinatory experience. Such beliefs are often similar to many general beliefs people hold about

the relationship between self, other people and the world, and often such beliefs may constitute an aspect of normal attribution, or social constructions about anomalous experience (e.g. beliefs in special powers such as telepathy or hypnosis and religious experience).

Other studies have highlighted the relationships that people have with their voices. Benjamin (1989) studied 30 hallucinators with differing psychotic disorders finding that they had integrated and interpersonally coherent relationships with their voices. Qualitative differences in the nature of this relationship were found with different diagnostic syndromes. Those with a diagnosis of schizophrenia showed a mixed picture in which no stable type of relationship with the voice could be defined. Benjamin suggested that the social relationships people had with their voices may serve an adaptive function which psychological treatments may need to take into account.

The significance of the hallucinatory experience has also been shown to relate to beliefs about the identity, omnipotence and purpose (particularly the intent to do harm or good) of the voice (Chadwick & Birchwood, 1994). These themes characterised the voices of 26 people. Their emotional and behavioural reactions to the voices appeared to be consistent with these beliefs. This work, which is seen as an important development of cognitive behavioural theory of voices, will be described and critiqued in detail in section 1.9.

The importance of beliefs about, and the emotional significance of voices represents a direct challenge to the traditional psychiatric perspective where the "personal meaning" of a symptom is considered insignificant (see Berrios, 1991). While it is probable that hallucinatory experiences may sometimes derive from cognitive-neurological deficits or interpretative biases, it is important not to ignore the complex relationships that people have with their voices.

Limitations in our understanding of this relationship could be partly responsible for the restricted effectiveness of psychological interventions to date. Such interventions will be briefly examined before discussing the need for thorough

assessment of voices in order to study them from a cognitive-behavioural perspective.

## **1.7 Psychological Interventions for Voices**

### **1.7.1 Introduction**

Developments in psychological treatments for voices reflect the changing attitudes and approaches to severe mental health problems (Slade & Haddock, 1996). The first approaches were grounded in operant and classical conditioning principles and were viewed as methods of behaviour modification (see Slade & Bentall, 1988 for a review). Such studies used reinforcement and aversion techniques and may demonstrate simply that patients learned not to communicate, or observably respond, to their voices in the presence of others (e.g. Nydegger, 1972; Bucher & Fabricatore, 1970).

More recent psychological approaches to voices can be divided into three categories: those involving distraction, those focusing on auditory hallucinations and those concerned with anxiety reduction as the focus of the intervention (Slade & Bentall, 1988).

### **1.7.2 Anxiety Reduction Techniques**

Slade (1972, 1974) used imaginal systematic desensitisation in two single case studies of hallucinators. In both cases, detailed behavioural analyses suggested the voices were triggered by increased tension and emotional arousal. The use of behavioural techniques including progressive muscular relaxation, imaginal (1972) and *in vivo* (1974) desensitisation led to a decrease in self-reported frequencies of hallucination. The earlier intervention was unfortunately accompanied by the development of depressive symptoms, whereas the second patient did not become depressed following treatment, and the decreased frequency of voices was maintained at five week follow-up. Seigel (1975) also described the use of systematic desensitisation in a single case study of a patient with a diagnosis of

schizophrenia, who became anxious following the voice experience. Relaxation and desensitisation to the anxiety generated by the voices led to decreased disturbance from the voices and a change in their quality from hostile to friendly, maintained over 21 month follow-up.

### 1.7.3 Distraction Techniques

Based on the idea that voices stem from patients misinterpreting their own inner speech, a number of studies investigated the effects of different forms of external input on voices (e.g. Slade, 1974; Margo *et al.*, 1981). After examining varying types of distracting material, Margo *et al.* (1981) found reading aloud to be the most effective strategy. The least effective were those which were considered to be the least meaningful (e.g. listening to a boring story was less effective than listening to an interesting story, listening to irregular electronic blips was less effective than listening to a boring story).

Further studies of distraction have utilised stereo headphones (Feder, 1982; Morley, 1987; Hustig, Tran, Hafner & Miller, 1990). Hustig *et al* (1990) concluded that this approach was only particularly useful for people with innocuous voices and the other authors found only temporary reductions in the voices.

Nelson, Thrasher and Barnes (1991) encouraged 20 patients to use three types of distraction approaches at different times including, stereo headphones, earplugs, and sub-vocal counting. The stereo was found to be particularly helpful, but only seven patients used the approaches in the long-term.

The conclusion from such distraction approaches is that they may be more helpful when the voices are neutral in content. The beneficial effects appear to be restricted to the time the individual is engaged in the technique and do not appear to generalise beyond this.

#### 1.7.4 Focusing Techniques

In contrast to distraction, a number of researchers have encouraged patients to focus on, and monitor, the occurrence of their symptoms. The underlying theory is that the focusing would reduce the likelihood of internally generated verbal material being misattributed to an alien source (Bentall, 1990; Frith, 1992).

Reductions in the frequencies of voices were reported in a patient who recorded their voices (Rutner & Bugle, 1969). However, this was combined with a positive reinforcement schedule which may have effected self-reporting. Greene (1978) used focusing to overcome what he saw as the avoidance of personal responsibility. Patients in his study were encouraged to refer to the voices as their own thoughts: this led to the successful elimination of voices for two patients. Similarly, Fowler and Morley (1989) encouraged five patients to bring on and dismiss their voices in order to demonstrate that the voices were under their control as opposed to that of an external source. However, with concurrent use of distraction, only one reported a reduction in voice frequency, while four reported an increase in the control they perceived they had over the voices.

#### 1.7.5 Combined Approaches

Results here show some short-term positive effects. It has been suggested that focusing should provide more lasting benefits by improving patient's reality monitoring skills and further opening the possibility of exploration of beliefs about voices and belief modification (Haddock, *et al.*, 1996). An intervention study to compare these approaches is currently being undertaken (Haddock *et al.*, 1996). Results to date, suggest small but significant reductions of voice frequency, distress and disruption to life, post-assessment in both the distracting (n=8) and focusing (n=11) interventions as compared to waiting list controls. Only a small number of patients were contactable for follow-up (n=12) and statistical analyses were not possible. The beneficial effects did not impact on measures of anxiety or depression. For the focusers, there were improvements in self-esteem (as measured by the

Rosenberg Self-Esteem Scale [Rosenberg, 1965]) whereas self-esteem decreased for the distracters.

The authors conclude that a combined approach may be the most appropriate therapeutic strategy using focusing to explore content, beliefs and meaning attached to the voices, while encouraging distraction to provide patients with some control over their voices (Haddock *et al.*, 1996). In practice, many have used a combination of these approaches to provide more comprehensive treatment strategies to the often multiple needs of people with voices (e.g. Fowler *et al.*, 1995).

Such techniques also highlight the importance of belief change in the reduction of voices. However, facilitating the re-attribution of voices to an internal source could lead to further distress for a person, if the content is not desirable to internalise. This prompted research developments into the personal nature of the experience of voices (Chadwick & Birchwood, 1994). These researchers observed that some people may experience voices as distressing, frightening, reassuring or even amusing, which led them to question how the content and form of the voice was connected to a person's cognitive, behavioural and affective responses (see Section 1.9). Such questions highlight the need for more detailed assessment of the voice experience.

## **1.8 Assessment**

A structured and methodical approach to assessment is characteristic of all approaches to cognitive-behavioural therapy. The assessment of psychotic symptoms and associated reactions (behavioural, cognitive and emotional) is important for describing and analysing the structure of the individual's symptoms, and subsequently determining treatment or management and the assessment of change (Garety, 1992). In this research, which is concerned with the investigation of hallucinations in the context of beliefs the experiencer holds about this experience and the self, it is important to assess the hallucinations, associated responses and self-esteem.



Symptom rating scales, such as the Psychiatric Assessment Scale (Krawieka, Goldberg & Vaughan, 1977) although designed to assess change in subjects, are also suitable for initial assessment of positive and negative symptoms, giving a rating on their severity. However, instruments designed to assess specific symptoms are likely to be of greater use in the psychological understanding, treatment and management of the symptoms of schizophrenia. Whilst there are a number of scales to assess delusions (e.g. The Characteristics of Delusions Rating Scale: Garety & Hemsley, 1987), there are surprisingly few of proven reliability and validity which provide detailed information about hallucinations (Garety, 1992).

### **1.8.1 Assessment of the Characteristics of the Experience of Hallucinations**

As it has already been noted, hallucinations occur in a variety of conditions and circumstances. It is questionable whether the characteristics of the hallucination reported are related to the type of pathology observed. Aggernaes (1972a) describes a structured (if not entirely standardised) interview to assess seven reality "characteristics" of hallucinations, which serve as a criteria for distinguishing between true hallucinations and other related experiences (Slade & Bentall, 1988). These include assessing whether the experience has the quality of perception or of imagination, the quality of existence versus non-existence or of "publicness" versus "privateness". Studies reported of auditory hallucinators include 41 with a diagnosis of schizophrenia (Aggernaes, 1972a) and 11 LSD drug abusers (Aggernaes, 1972b). The profile of reality characteristics, as determined by this method, highlights differences in the experiential quality of different types of hallucination. For this reason, this study looked specifically at auditory hallucinations in people with psychoses.

### **1.8.2 Assessment of Beliefs about Voices**

Common to all cognitive-behavioural assessments of beliefs and experiences, is the difficulty in assessing a private phenomenon that relies on self-report. Assessing

beliefs about voices is no exception to this difficulty. Also, although researchers have increasingly regarded voices as multi-dimensional phenomena, the measures used can be dichotomous (e.g. Beliefs about Voices Questionnaire, BAVQ, Chadwick & Birchwood, 1995). There is a need for suitable methods for assessment of beliefs about voices and it is possible to draw on approaches used to assess delusions and hallucinations. Personal questionnaires (PQ: Shapiro, 1961) and the modified version; Personal Questionnaire Rapid Scaling Technique (PQRST: Mulhall, 1976; 1978) provide a reliable method for assessing change in delusions (Brett-Jones, Garety & Hemsley, 1987) and have been used in previous outcome studies to assess delusions and hallucinations (Fowler & Morley, 1989; Garety *et al.*, 1994). The advantages of PQRSTs are that they are multi-dimensional, individualised and suitable for repeated measurement.

Other measures have identified the precipitants to the voice for example; using diary methods such as the Auditory Hallucination Record Form (Slade, 1972), and assessments of loudness, clarity, distress and distractibility of the voices (Hustig & Hafner, 1990).

The most comprehensive cognitive behavioural assessment of voices, to date, is detailed by Chadwick *et al.*, (1996) and was developed from their analysis of 26 patients with voices (Chadwick & Birchwood, 1994). They emphasise the distinction between the voice content (commands, insults, commentary) and the individual's relationship with the voice (beliefs, affect, behaviour) and have refined a semi-structured interview schedule to guide exploration (Chadwick *et al.*, 1996). These researchers later go on to advocate thought-chaining as a procedure to go beyond the beliefs about the voice's benevolence and malevolence (or delusional defence, i.e. false beliefs that have developed to defend against negative self-esteem) and reveal the defended negative self-evaluations of the patient.

### 1.8.3 Measuring Self-Esteem

Self-esteem is considered of to be of importance in this research, in order to understand further the importance of beliefs about voices and their emotional significance. It is suggested that it is this factor that has been largely neglected in the research to date.

Low self-esteem is often associated with psychological problems as a cause, mediating factor, or consequence. The measurement of self-esteem is problematic, particularly due to the lack of adequate definition. Various definitions have been proposed, broadly agreeing that self-esteem is based on beliefs stemming from self-evaluation of character, abilities, and behaviour. These beliefs gradually develop as a result of experiences during childhood and upwards (Coopersmith, 1967; Beck, 1967)

Bringing together the work of a number of researchers, Robson (1989) defines self-esteem as: "the sense of contentment and self-acceptance that results from a person's appraisal of his own worth, significance, attractiveness, competence, and ability to satisfy his aspirations". His self-concept questionnaire (Robson, 1989) is designed to measure self-esteem along these components. However, although high self-esteem scores are seen as indicative of optimal personal functioning, this ignores the possibility of defensively high self-evaluation (Harder, 1984).

Perhaps a more oblique measure of self-esteem is given by the Dysfunctional Attitudes Scale (Weissman & Beck, 1978). It is designed to "elicit information on an individual's dysfunctional beliefs which act as schemas by which he constructs his world" (Weissman & Beck, 1978) (e.g. "I should be able to please everybody"). The scale is scored such that higher scores are indicative of a high degree of discrepancy between perceptions of the self and the ideal self, and are therefore associated with a negative view of the self.

Both of the above methods are used to access self-evaluations, in addition to the use of thought chaining. Thought chaining, often described as the Downward Arrow technique (Burns, 1980, p.235-241) or Inverted Arrow Technique (Williams,

1992, p.172-174) is a standard cognitive technique to explore the self-evaluations or underlying beliefs and assumptions. Negative self-evaluations are indicative of poor self-esteem (Burns, 1980).

## **1.9 Recent Research using a Cognitive Model:**

### **Findings and Methodological Problems**

The literature reviewed to this point, indicates that cognitive-behavioural interventions are as yet of limited efficacy with voices. Chadwick and Birchwood (1994) have offered a development in theory which may be relevant to progress in theory and therapy. This work will now be considered in detail.

Chadwick and Birchwood (1994) have postulated that a mediating factor between the voice experience and distress may be a person's underlying beliefs about their hallucinations. This led them to examine the variables of the beliefs about the voices and what a person attributed to its meaning. They identified three major themes which characterised the voices of 26 people; the voice's omnipotence; the voice's intent to do harm or good (malevolent or benevolent), and the reaction to the voices in terms of engagement, resistance or indifference. All 26 participants (100 per cent) perceived their voices to be extremely powerful or omnipotent. Participants give details that added to their sense of the voices' omnipotence, including: the presence of collateral symptoms (i.e. visual or tactile hallucinations) (for 73 per cent of participants); events attributed to their voices and cited as proof of the voices great power (for 42 per cent of participants); and the inability to influence the onset or termination of their voices (for 81 per cent of participants).

With regard to beliefs about malevolence and benevolence, 46 per cent of participants believed the voices to be punishing or persecuting for a past misdemeanour, 23 per cent believed the voices wished to maintain personal well-being, 19 per cent had a mixture of both malevolent and benevolent voices and 12 per cent were uncertain as to the purpose of their voices. Although the voice content was frequently put forward as evidence for a particular belief, this was not always the

case, and 31 per cent of the participants had beliefs that were directly at odds with the content of their voices (i.e. the content was benign, while the voices were malevolent or the content was malign, while the voices were benevolent). Behavioural responses to the voices appeared to be consistent with the person's beliefs about his or her voices. Where the voice was believed to be benevolent, there was 100 per cent engagement, and where malevolent, 100 per cent resistance. Affective responses corresponded very closely to behavioural response and beliefs about the voices so that malevolent voices provoked negative emotions (100 per cent) and benevolent provoked positive emotions (91 per cent)

Although Chadwick and Birchwood's research provides interesting information, there are a number of methodological problems. Firstly, as the first study of this kind, the information should be regarded as provisional, and in need of replication. Further to this, the study does not document any tests of inter-rater or test re-test reliability, nor provide any information of the participants' mood states or self-esteem. A second methodological concern is the need to operationalise how much information gained from the assessment required prompting, and how much was spontaneous. Finally, the participants were selected from a hospital that provides innovative services for people with psychoses. It may be that the participants were not representative of people who hear voices. Clearly such research requires wider replication before firm theories can be established.

From this research, Chadwick and Birchwood (1994) have developed a cognitive approach designed to undermine core beliefs about the power, identity, and purpose of the auditory hallucination. This has been evaluated (Chadwick & Birchwood, 1994), with favourable results in terms of belief reduction. However, patient numbers were low ( $n=4$ ) and results again need replicating. The paper also reports some reduction in distress, although this was not adequately detailed.

To summarise, what Chadwick and Birchwood (1994) have shown in this study is the importance of beliefs about voices that appear more strongly to predict affective responses than the belief content. However, what appears to be missing

from this model is the significance of these beliefs in terms of their congruence with the person's subjective evaluation of themselves; that is, their self-esteem.

Within the cognitive model, beliefs can be images, inferences, evaluations or assumptions which originate from our early relationships and life experiences (Beck *et al.*, 1979; Gilbert, 1992). It would therefore seem reasonable that self-esteem might be an important variable that could in turn interact with factors such as the presumed identity, omnipotence, and purpose of the voice, which, Chadwick and Birchwood argue, leads to the voices being construed as benevolent or malevolent. Self-esteem is also implicated in the occurrence of delusional beliefs (Bentall, 1994) and it is therefore of interest in developing an understanding of hallucinations which often co-occur with delusions.

In later work, on the basis of clinical experience, Chadwick *et al.*, (1996) extend their theory to include the proposal that these beliefs about voices (which are formally speaking secondary delusions) act as psychological defences of the self that guard against low self-esteem (see also Bentall *et al.*, 1994; Neale, 1988). They suggest that thought chaining may be used to reveal the defended negative self evaluations, yet do not provide empirical evidence for this, nor adequately incorporate it into a cognitive model (see Chadwick *et al.*, 1996).

The cognitive model states that we have pre-existing beliefs regarding the self that develop as a result of past experience (Beck *et al.*, 1979). In relation to voices, the model can be formulated as a cycle: following a voice experience, the voice will be interpreted according to the beliefs about the voice and the meaning of the content of the voice for the self. It is postulated that the degree of congruence of the voice content with the self concept of the individual, will influence the affective response. To continue the cycle, the affective response will be followed by an expectation of the imminence of a further voice experience. This in turn, acts as a stressor which increases the potential for symptomatology (Leff, Kuipers, Berkowitz, Vaughn & Sturgeon, 1983). As the spiral continues, the interpretations, meaning and responses may be further endorsed.

## **1.10 SUMMARY**

In summary, although voices are known to be the most common of the positive symptoms of psychosis, and can be distressing, it is the one area that is the least encouraging in terms of psychological treatments. It is clear that the voice experience may be shaped by complex beliefs and the emotional significance of voices to a person, but this has not been fully explored. Cognitive models have been used to develop an understanding of beliefs about, and responses to voices, but this work requires replication. Further, what has not been empirically investigated, is the significance of these beliefs in terms of their congruence with a person's self-esteem, a factor emphasised within a cognitive model.

## **1.11 AIMS AND HYPOTHESES**

The aims of the present study are to provide an empirical, methodological and theoretical contribution to the development of the cognitive model of voices. If successful, the results should lend themselves to the further development of a theoretical framework for understanding the emotional impact of voices, which may be tested, and a further development of a cognitive theory of voices and their treatment by psychological therapy. As stated, the study aims to replicate the work of Chadwick and Birchwood (1994), to establish the reliability of the methodology, and to extend their work by exploring further variables that may be important. One such variable to be considered, is how the personal meaning activated by the content of the voice is congruent with the person's self-concept.

If, in terms of congruence with self concept, the personal meaning activated by the content is an important variable, this would suggest that the more potent treatment would be to work with the underlying beliefs a person may have about themselves.

This research has four main research aims, with their own specific hypotheses:

#### **1.11.1 Aim 1:**

To collect a set of data, within a cognitive framework, on the content of people's voices and their beliefs about the identity, power, purpose and personal significance of the voice.

#### **1.11.2 Aim 2:**

To examine the reliability of the methodology employed.

##### **1.11.2.1 Hypothesis 1:**

*H1 The methodology used is reliable, both test re-test and inter-rater.*

*H0 The methodology used is not reliable, both test re-test and inter-rater.*

#### **1.11.3 Aim 3:**

To compare the obtained data set with that of Chadwick and Birchwood (1994).

##### **1.11.3.1 Hypothesis 2:**

*H1 There will be differences in the appraisals of voices identified by Chadwick and Birchwood (1994) (i.e. beliefs about identity, power, purpose and compliance) and the present sample.*

*H0 There will be no difference between the appraisals of voices identified by Chadwick and Birchwood (1994) (i.e. beliefs about identity, power, purpose and compliance) and the appraisals found in this sample.*



### 1.11.3.2 Hypothesis 3:

*H1 There is an association between the content of the voice and the affective response.*

*H0 There is no association between the content of the voice and the affective response.*

### 1.11.3.3 Hypothesis 4:

*H1 There is an association between the belief in the content of the voice and the affective response.*

*H0 There is no association between the belief in the content of the voice and the affective response.*

### 1.11.4 Aim 4:

To extend the work of Chadwick and Birchwood (1994) by exploring further variables that may be important.

#### 1.11.4.1 Hypothesis 5:

*H1 There is an association between the personal meaning activated by the content of the voice and the affective response.*

*H0 There is no association between the personal meaning activated by the content of the voice and the affective response.*

#### 1.11.4.2 Hypothesis 6:

*H1 There is a stronger association between the level of conviction in the personal meaning and the affective response than for the level of conviction in the content.*

*H0 There is no difference in the strengths of associations between the level of conviction in the content, and the personal meaning activated by the content relate to the affective response.*

#### **1.11.4.3 Hypothesis 7:**

*H1 There is an association between the personal meaning activated by the content of the voice and a person's self-esteem.*

*H0 There is no association between the personal meaning activated by the content of the voice and a person's self-esteem.*

#### **1.11.4.4 Hypothesis 8:**

*H1 There is a relationship between distress and personal meaning activated.*

*H0 There is no relationship between distress and personal meaning activated.*

## SECTION 2

### METHOD

## **2. METHOD**

### **2.1 OVERVIEW**

After introducing the design of the study, details of the selection of participants are given followed by a description of the measures used. Following this, ethical considerations are discussed and the procedure is outlined.

### **2.2 DESIGN**

The study involves collecting detailed data from a single group of participants. There are two experimental designs: A within-group correlational design investigating associations between variables; and a replication study involving comparisons with an independent sample.

### **2.3 PARTICIPANTS**

The participants were patients with a clinical diagnosis of schizophrenia, or other psychotic diagnosis, who had experienced auditory hallucinations in the two months prior to interview. The following conditions led to exclusion: the inability to give full informed consent, the inability to participate in an interview of at least 20 minutes, or scoring less than the tenth percentile on a test of cognitive impairment (The "Quick Test", Ammons and Ammons, 1962).

### **2.4 MEASURES**

#### **2.4.1 Demographic Data**

Initially demographic information was collected; this consisted of sex, age, ethnic origin, psychiatric diagnosis, details of any maintenance medication, number of years hearing voices, and present living situation.

### 2.4.2 Screening

The Quick Test (Ammons and Ammons, 1962) was used to measure cognitive impairment, principally to screen out those participants who would not understand the measures and whose responses may therefore be invalid or unreliable. It is a well-established and validated measure which is highly correlated to the Wechsler Adult Intelligence Scale [WAIS: Wechsler, 1955] (e.g. Ogilvie, 1965). It may be used as a screening tool, as a quick and crude assessment of IQ.

Items from the psychiatric assessment scale (Krawieka *et al.*, 1979) were obtained to indicate thought disorder and the presence of both positive and negative symptoms of schizophrenia.

### 2.4.3 Cognitive Assessment of Voices

A semi-structured interview schedule was used by Chadwick and Birchwood (1994) (see appendix b) to guide the exploration of antecedents to, beliefs about and the consequences of hearing voices. The interview assesses beliefs by clarifying central delusions about a voice's identity, purpose and power, eliciting the evidence for each. The schedule was used with 26 people who hear voices. As there is no other research that details such an analysis of voices, and this schedule has no reliability and/or validity data, it was piloted on two interested volunteers who were actively experiencing voices. This led to minor modifications, specifically by exploring the identity of the voices prior to discussing beliefs. This appeared a less emotive starting point from which to engage with people who may never have had the opportunity to discuss their beliefs about the voice. Further modifications were made to shorten the schedule by reducing the probes on the behavioural responses as this research was specifically interested in the affective response (see appendix c for modified version). The most important modification was to aim to ask open questions before prompting.

The schedule is designed to be flexible and the structure acts as a guide only. Appropriate prompts are noted and were used when necessary during the interview. The reliability of the schedule is examined in this study.

#### **2.4.4 Personal Questionnaires**

The Personal Questionnaire technique (PQ; Shapiro, 1961) allows for the development of idiographic questionnaires that measure psychological problems specific to individual psychiatric patients. It has been used extensively with people with psychosis (see Garety, 1992) both to assess dimensions of delusion such as conviction, preoccupation and anxiety, and to assess hallucinations for frequency, intensity and distress (Garety *et al.*, 1994). An adaptation of this, the Personal Questionnaire Rapid Scaling Technique (PQRST; Mulhall, 1976, 1978), has also demonstrated internal reliability and internal consistency, and has clear face validity. It has also been used to assess delusions and hallucinations (e.g. Fowler & Morley, 1989). This latter technique has the advantage of a broader span of alternatives to choose from and has been found to be more easily administered (Cliffe, Possami & Mulhall, 1995). However, it has the disadvantage of the participants not choosing their own adjectives (as would be the case in the PQs). The PQRST was chosen in this study, as having a wider range of scores and therefore preferable for studying associations with other variables. To increase the validity of this method, participants were asked to rank order the adjectives given (written on cue cards) and allowed the option of changing the adjectives to ones they would be more likely to use (e.g. totally as opposed to absolutely). The PQRST symptom statements were chosen to provide an assessment of: the intensity of the affective response to the voice, the degree of conviction in the accuracy of the voice, and the degree of conviction in the personal meaning of the voice (where applicable). For example, in assessing the intensity of the affective response, the interviewer would use the main voice content and say: *"When the voice says you're evil, which of these two adjectives comes nearer to describing how depressed you feel,"* (present first two adjective

pairs)"...*extremely or very?* For the degree of conviction in the belief of the voice content, the interviewer would say: "*When the voice says that you are evil, which of these comes nearer to describing the accuracy of the voice?*" (present first two adjective pairs), "*definitely true or almost definitely true?*".

In terms of reliability, PQs have immediate test re-test reliability with weighted Kappas of .63 to .89 (Brett-Jones *et al.*, 1987). They have also demonstrated construct validity, for example PQ assessment and a self-report method of percentage rating correlated very closely (Pearson's  $r$  of 0.99) (Chadwick & Lowe, 1990).

#### **2.4.5 Standardised Questionnaires**

The Beck Depression Inventory (BDI) (Beck *et al.*, 1961), and the Beck Anxiety Inventory (BAI) (Beck *et al.*, 1990) were used to measure levels of depression and anxiety respectively. They are both well established measures used in the assessment of these problems.

#### **2.4.6 Thought Chaining**

The underlying beliefs about the self (personal meaning) activated by the voice was accessed via thought-chaining (Downward Arrow Technique: Burns, 1980, p.235-241; Inverted Arrow Technique: Williams, 1992, p.172-174). This is a well-established cognitive technique that is frequently used in clinical practice to explore a person's self-evaluations or underlying beliefs. In this study, the technique involved using a gentle exploration of what the voices mean to a person, what do they make them think about themselves and exploring the responses further as appropriate; with the aim of avoiding distress for the participant.

As this is predominantly a clinical tool, the reliability and validity of this technique has not been established.

### 2.4.7 Measures of Self-Esteem

The Self Concept Questionnaire (Robson, 1989) is scored on a scale of 0 to 210, with a lower score indicating lower self-esteem. The norms for normal controls,  $N=151$ , mean=140, s.d.=20, and adult psychiatric outpatients,  $n=50$ , mean=112, s.d.=24.5. It has demonstrated reliability (Cronbach's coefficient alpha) levels of .89 for intraclass correlation of items. For test re-test correlation of global scores was .87. In terms of validity, the measure correlates highly with other measures of self-esteem (e.g. Rosenberg's Self Report Measure, Rosenberg, 1965) with positive correlations of 0.804 ( $p<.0001$ ) (see Robson, 1989).

The Dysfunctional Attitude Scale, (DAS; Weissman & Beck, 1978) is an instrument used to identify negative dysfunctional assumptions. Weissman and Beck (1978) report mean reliability (Cronbach's coefficient alpha) levels of 0.89 and above. It is scored on a scale of 40 to 280, with a higher score indicating lower self-esteem. The norms for normal undergraduates,  $N=355$ , mean= 119.4, s.d.=27.2 (Weissman, 1979).

### 2.4.8 Measure of Insight

This study used a quick method of self-reported insight; the Insight Scale for Psychosis (IS: Birchwood *et al.*, 1994) which has various applications including augmenting clinical judgements of insight. The IS assesses insight into attributions about illness, symptoms and the need for treatment. It is scored on a zero to twelve scale, with scores above 9 indicative of good insight. Reliability (Cronbach's alpha) levels of .75 are reported and satisfy tests of validity with a moderate intercorrelation amongst components of insight (mean  $r=.42$ ) (Birchwood *et al.*, 1994).

## 2.5 ETHICAL CONSIDERATIONS

Ethical approval from two Research Ethics Committee was applied for and granted (see appendix a for example).



### **2.5.1 Consent**

The research was explained thoroughly by both written information and verbally in person. Participants were given opportunities to ask questions about the research. Consent forms were completed at the start of individual interviews (see appendix A, ethics application).

### **2.5.2 Confidentiality**

Participants were seen individually in either GP surgeries, hospitals, or their own homes. The information given was kept in a locked cupboard up until the analysis stage where participants were given code numbers known only to the researcher.

### **2.5.3 Distress**

Clinical judgement was used throughout interviews to monitor potential distress. Where difficult information was being disclosed, participants were offered the opportunity to take a break, or to discontinue. In some instances, brief advice based on clinical experience with psychotic problems was offered. Where appropriate/requested, information was passed on (with consent) to other staff involved in the participant's care, along with the suggestion of a referral to psychological services.

## **2.6 PROCEDURE**

### **2.6.1 Recruitment**

Following ethical approval (appendix a), clinical teams in the region were approached by the researcher with a letter of enquiry to responsible clinicians and other team members seeking participants who experience voices. This was followed up by telephone conversations to arrange a visit at clinical team meetings. This was used to discuss the background to and aims of the project, the feasibility of approaching potential participants and to discover how best to arrange this process. Support varied amongst the teams approached, ranging from enthusiastic support to

general disinterest. Lists of potential names were either accessed within the meeting or by one or two team members offering to liaise with others.

Prior to contacting the participant, discussions were always arranged with key-workers to gain their verbal approval and check the appropriate way in which to contact the client. Responsible clinicians were contacted by letter (appendix a) and returned consent forms before participants were approached.

In the event, the initial contact with the participant depended upon the view of the keyworker and responsible clinician. Some workers were happy for direct contact via a letter whereas others preferred to speak to the participant themselves prior to contact. Therefore, the initial contact and option to consent was not always direct from the researcher.

Letters to potential participants included details of the study and a consent form (appendix a). Appointments were made at either clinics, GP surgeries, or the participant's home.

Participants were initially given the opportunity to discuss the information sheet and ask any questions. All participants who met with the researcher consented and were willing to begin the research at once.

Letters of information (appendix a) were sent to the General Practitioners (GPs) of the participants to inform them of their involvement in the research.

### **2.6.2 Interviews**

Participants were screened for cognitive impairment using the Quick Test (Ammons and Ammons, 1962) which takes approximately 15 minutes to administer and score. All participants met the inclusion criterion (of scores in the top 90 per cent) and continued with the rest of the study.

The length of the interviews depended on the attention span of the participant. The majority of participants had two appointments lasting one hour. Rates of attrition and item non-response are detailed in section 3.3.

The cognitive assessment of voices interview schedule (appendix b) is semi-structured and was used with flexibility and discussion. The schedule was followed by the PQRST measures.

Between the two appointments, participants were asked to complete the standardised tests (appendix d) to be collected from them in the second appointment.

#### **2.6.2.1 Inter-rater Reliability**

As the interview has no reported reliability, this was assessed by audio-taping the cognitive assessment of voices and checking for inter-rater reliability on 30 per cent of the interviews (see appendix e). The selection of these interviews was across the time scale of the research. It was not a random selection but depended on practicalities such as, the participant consenting to have the interview audio-taped.

#### **2.6.2.2 Test Re-test Reliability**

Test re-test reliability was assessed by re-assessing (cognitive assessment of voices and the PQRST measures) 30 per cent of participants one week later. Again, biases may exist as these participants were the same 30% who agreed to have their interview audio-taped.

## **SECTION 3**

## **RESULTS**

### **3. RESULTS**

#### **3.1 OVERVIEW**

After discussion about data type and statistical analysis, data (qualitative and quantitative) are presented in turn, relating to each specific aim and hypothesis.

#### **3.2 TREATMENT OF DATA**

Descriptive data are initially presented largely based on the format and categories of Chadwick and Birchwood (1994), with additional information where necessary. The qualitative data are coded into categories (see appendix f for details) which allow for reliability checks and statistical comparisons with Chadwick and Birchwood's (1994) Birmingham sample. The data set consists of categorical data and interval data from the PQRST measures, so that non-parametric statistical procedures are appropriate. All statistics were performed using SPSS for Windows. Where data are presented in tables or the text, percentages may not always sum to 100% because of rounding up or down.

#### **3.3 RESPONSE RATES**

From 11 community teams, nine teams supplied names of potential participants. In total, 41 people were approached to participate, and 31 people (all with a diagnosis of schizophrenia) consented to the research (76 per cent).

***Table 1: Response rates for participation in study.***

Number of participants approached	Number consenting	% consent
41	31	76%

Of the 31, one participant had not heard voices for five years, and was considered unsuitable for the research (he was given information concerning anxiety reduction, as this was his major concern). Of the ten non-consenters, two declined as they had

not experienced hearing voices, four declined for unstated reasons and four did not reply to the written correspondence.

### 3.3.1 Attrition

The rate of attrition was 6 per cent, that is, two participants out of the 30 decided not to meet for the second interview. For both, this was due to increased personal difficulties that the participants were experiencing, which were not related to the research.

### 3.3.2 Item Non-Response

Item non-response occurred in four interviews. This included the two participants who dropped out for personal reasons. In both of these cases, the non-response was for the self-completion questionnaires as the rest of the schedule had been completed. One participant did not complete any of the standardised questionnaires at his request. Finally, a further participant chose not to complete the Dysfunctional attitude scale.

All participants responded fully to the semi-structured interview and PQRSTs. Of the 30 participants, 24 were able to access a personal meaning. Only one participant had inconsistent responses (unscorable) on the PQRSTs and this was for both the level of conviction of the accuracy of the content of the voice and the level of conviction in the personal meaning activated. This was also coded as missing data.

## 3.4 DESCRIPTIVE DATA

***Aim 1: To collect a set of data consisting of a cognitive assessment of voices.***

A total of 30 people were interviewed. Twenty males (67 per cent of sample) and ten females (33 per cent of sample), aged 19 - 69 years, all of whom had been hearing voices for at least six months. All participants had a clinical diagnosis of schizophrenia and were currently maintained on neuroleptic (anti-psychotic)

medication. They had all heard voices in the two months prior to their research interviews.

Table 2 provides the data on ages, number of years hearing voices, IQ and the standardised assessments of anxiety, depression and self-esteem. On average, most participants were moderately depressed and anxious, had low levels of self-esteem and were reasonably insightful as to their psychosis.

**Table 2: Data on population surveyed.**

	Age (years)	No. Years Hearing Voices	IQ	BDI <sup>a</sup> Score	BAI <sup>b</sup> Score	SE <sup>c</sup> Score	DAS <sup>d</sup> Score	Insight <sup>e</sup> Score
Mean	40	13	98	21.2	18.3	105	146.9	8.3
Range	19 - 69	0.5 - 40	80-116	1 - 54	0 - 49	42 - 173	98-184	0-12
s.d.	11.4	9.1	9.9	13.5	13.4	32.3	23.1	3.0

<sup>a</sup>Beck Depression Inventory, N=27; <sup>b</sup>Beck Anxiety Inventory, N=27; <sup>c</sup>Robson's Self-esteem scale, N=27; <sup>d</sup>Dysfunctional Attitude Scale, N=26; <sup>e</sup>Insight scale score, N=27.

All participants were living in the community or supported housing. The majority were of white European origin, with two participants being of African-Caribbean origin, one of Chinese origin and one of Asian origin (see table 3).

A cognitive assessment of each participant's experience of hearing voices was completed on the basis of the interview data. The information elicited was grouped into distinct categories: beliefs about the voice's identity, beliefs about the voice's purpose, whether the voices were construed as being powerful and evidence for this, and the affective and behavioural responses. Table 3 details the participants' experiences of hearing voices.

Table 3: Cognitive Assessment of Voices.

PARTICIPANT	SEX & ETHNICITY	AGE	CONTENT	BELIEFS RE: IDENTITY/SEX	BELIEFS RE: PURPOSE	EVIDENCE OF VOICES PURPOSE/POWER	AFFECTIVE RESPONSE	BEHAVIOURAL RESPONSE	PERSONAL MEANING
1	M white	47	"Hang yourself you're evil, cut your throat you're damned".	No identity. No identifiable sex.	Part of schizophrenia. Punishment by God, don't know why.	Uncertain.	Suicidal.	Sleep, let them be.	I'm a worthless human being.
2	F white	33	"You're fat, ugly and useless".	Voices of Spirits 1 of each sex & a crowd of both sexes.	Punishment for having been abused, having an abortion, being a bad mother. They are from Hell and they want my soul.	They make me do things, they know my past. <i>Tactile</i> -I feel an old man with his hand over my mouth. <i>Visual</i> -I see a woman in brown rags lying horizontal above me.	Depressed.	Listens & talks back at them.	I'm no good at anything.
3	M white	30	"We're not going to perform your composition, its bullshit".	3 voices from operatic society 2 colleagues & 1 tutor. Female voices mostly.	Part of illness, under too much stress. They were trying to drive me mad, to persecute me.	They know a lot about me. The girl sometimes says she wants to sleep with me-I smell her scent and I find it overpowering and off-putting.	Unhappy.	Answers back.	I'm an idiot, a piss artist.
4	M white	35	"You're a bloke that whistles a lot".	Lots of voices from my local village, mainly male.	I've been singled out by the community for being different. Persecution for being a dropout. They want me to have a nervous breakdown.	Delusions of reference- everyone talks about me. They also follow me & know all about me.	Depressed.	Try to ignore, or shout back when alone.	I'm useless.
5	M Chinese	40	"We now know you're highly secure". "Absolutely documented".	A group of people chanting in the distance, both sexes.	Don't know. Possibly being punished or persecuted. Maybe due to a spinal illness.	People find me weird-they probably know I hear voices and have been to a mental hospital.	Anxious.	Ignore and try to sleep, or listen to music.	I'm the centre of attention. I'm safe in this country.
6	M white	28	Female: "are you okay, how you feeling?" Male: "I'm gonna get you".	2 voices, 1 male, a man I knew in prison, & a female I don't know.	The good voice (female) is trying to protect me from the bad voice (male). The good voice keeps me sane.	The good voice tells me good things which can help me out.	Confusion.	Listen and sometimes shout back.	I am beneath everyone else, a nut case, a bit of a fool.



Table 3 continued

PARTICIPANT	SEX & ETHNICITY	AGE	CONTENT	BELIEFS RE: IDENTITY/SEX	BELIEFS RE: PURPOSE	EVIDENCE	AFFECTIVE RESPONSE	BEHAVIOURAL RESPONSE	PERSONAL MEANING
7	F white	19	Repeat my name in a murmur.	4 or 5 voices, more male than female and belonging to friends and family.	Punishing and harmful but also give encouragement.	I see fingerprints coming through my curtain and lots of eyes.	Scared.	Listen, try to ignore, & sometimes shouts back.	I'm insane.
8	F white	28	"She thinks she's nice but she's not".	Lots of people of both sexes.	Telepathy, it happens to everyone when they are 21, they get the key to the door. Both harmful & helpful	Too many coincidences, they know a lot about me.	Miserable.	Varies: ignore, listen or respond.	Not accessible
9	M  African-Caribbean	27	"You're tired, go to bed" & other comments about daily tasks.	Spirits of dead relatives. A female is heard most often.	Trying to guide me and stop me from doing things.	A palm reader said I had friends in the spirit world who were trying to guide me.	Annoyed.	Try to ignore.	Trying to make me more beautiful through beauty sleep.
10	F white	52	Gun shots, & Mother saying "Someone shot your daughter".	Mother, Drs, and daughters neighbours daughter.	No real purpose, probably due to emotional problems.	None.	Distressed.	Variable, went to hospital.	I am guilty of not taking care, neglectful.
11	F white	37	"You deserve to have a breakdown, the way you use people".	Lots of voices, mostly male one being my college tutor.	Punishing for bad things I've done in the past, & improving me.	Their criticisms are valid, they know all about me.	Anger.	Lie down & try to ignore them.	That I am a worthless scrounger.
12	F white	37	"You're disgusting".	2 male voices probably psychiatrists speaking from an office in Hospital, & ordinary people of Oxford.	Very contradictory, they punish for all the things I did wrong & when they have finished they will help me.	They have told me why they are punishing me, & I agree with them for doing this.	Unhappy.	Listen and join in. If I ignore them, they laugh.	That I am a bit horrible but not as bad as others in this hospital.
13	F white	60	"Kill, kill, kill".	My foster Father.	Punishment for giving in to my step-father when he raped me and then having a still-born child.	The voices started soon after the event. I sometimes see the past before me and dead people walking on the road.	Confusion.	Turn on the radio, take a walk, join in conversation with other people.	I'm worthless.

Table 3 continued

PARTICIPANT	SEX & ETHNICITY	AGE	CONTENT	BELIEFS RE: IDENTITY/SEX	BELIEFS RE: PURPOSE	EVIDENCE	AFFECTIVE RESPONSE	BEHAVIOURAL RESPONSE	PERSONAL MEANING
14	F white	53	Tell me to murder people, to knock people off buses, push people off bicycles, to walk in front of buses.	More than one voice and always male.	Don't know, perhaps something to do with my past.	N/A	Fear.	Ignore them. I go to the shop and talk to the landlord.	Not accessible.
15	F white	45	"Put the power back into your own life".	1 male voice split into 2 seducers and 1 mentor. A further male voice and 1 female voice.	Sometimes punishing. To separate me from my ex-partner. Other times guiding.	I did separate from him, also, they used a vocabulary I did not have.	Bemused.	I listen because they have authority and if necessary I answer back.	I'm ineffectual.
16	F African-Caribbean	38	"You're fat and useless.	3 or 4 evil male spirits.	Evil spirits intent on driving me mad.	Voices tried to smother me in bed. Seeing a man with goats feet.	Sad.	Try to resist by switching off.	Not accessible.
17	M white	44	"Why don't you drop dead, you're a fool".	2 or 3, not sure of sex. Could be evil spirits or a guardian angel, people from history. The slightly dogmatic one is my Grandfather.	A further dimension, trying to find the meaning of life. They might be religious. Sometimes they punish, guide, help & give special powers to see into the future. A sign of madness.	Because of the coincidences.	Worried.	Ignore.	Not accessible.
18	M white	57	Tell me my wife is not coming home, that she is having an affair. They tell me not to worry, that I will thank them when my wife gets home.	They are friends, perhaps my Mother, perhaps my wife. Quite a jumble of about 6 people of both sexes.	To guide and direct me, to both drive me mad and keep me sane.	They are always there & know such a lot about me.	Anxious.	Try to ignore them.	I am a worrier.

Table 3 continued

PARTICIPANT	SEX & ETHNICITY	AGE	CONTENT	BELIEFS RE: IDENTITY/SEX	BELIEFS RE: PURPOSE	EVIDENCE	AFFECTIVE RESPONSE	BEHAVIOURAL RESPONSE	PERSONAL MEANING
19	M  white Polish	46	"We hate him".	Neighbours from the Portobello Road. About 6 or 7 both sexes.	It was after some bad acid trip years ago, & now we can't stop hearing each other until we die. To teach me a lesson but I am not sure what for.	They come from real people and they know a lot about me.	Fear.	Listen or try to ignore them.	I'm useless.
20	M  white	27	"Sell your soul to the devil". "Fuck off, "Get stuffed".	2 voices, one female the other male. The male voice is me, the female is my mother when she was young. Also, the birds talk about me.	Not sure yet. They are being creative about my thoughts, trying to both drive me mad and keep me sane.	They know what music I like and have told me the future.	Fear.	Get on with things.	I'm nothing.
21	M  Asian	33	"Kill yourself", "Shag your wife", "Kill your wife and children".	About 100 voices both male and female. One male voice is a Hindu man whose sister I slept with.	To punish me for my wrong doing.	None given.	Depressed.	Shout at them.	That I am a bad person.
22	M  white	32	"Kill yourself" "Chop up your girlfriend" "Set fire to the house".	Mostly 1, male voice but also friends who were killed in motorcycle accidents.	Trying to persecute me, like when I was at school & people called me fat.	They are persistent & tempt me to do bad things.	Depressed.	Shout back at them & scream.	I am an evil person.
23	M  white	47	"This is a religious fantasy about Christ" "Mother complex" etc	Mainly women, could be my dead mother, grandmother and father.	Not sure, it's something to do with a complex fantasy or repressed sexuality.	Not convinced of what they are about but they know things relating to deep inside me.	Stupid.	Ignore & occasionally join in.	That I am sexually inexperienced
24	M  white	50	Tell me to "Look at the blue, look at the crumbs, look at the dust etc"	Lots of people from Ireland, cousins of both sexes.	They want me back in Ireland, they are exercising my mind to make me strong.	They work things out and fascinate me with colours (visual).	Embarrassed	Listen and try to resist.	That I can be bettered. That I have to be pure to get to heaven.

Table 3 continued

PARTICIPANT	SEX & ETHNICITY	AGE	CONTENT	BELIEFS RE: IDENTITY/SEX	BELIEFS RE: PURPOSE	EVIDENCE	AFFECTIVE RESPONSE	BEHAVIOURAL RESPONSE	PERSONAL MEANING
25	M white	34	"You've let the side down".	Dead relatives, more than 1, all male.	Uncertain, they are trying to push me over the edge for no reason.	Not certain, but have made uncanny predictions.	Depressed.	Try to ignore them.	I am useless.
26	M white	37	"You're gonna get hit". "Do this, do that etc..."	Mainly 2 voices, male and female. Could be Mother and Father or Aunt and uncle. 1 good and 1 bad voice.	They don't make sense. They are punishing me for something I haven't done.	Don't know, I feel watched, & the voices know a lot about me.	Anxious.	Ignore them.	Not accessible.
27	M white	48	"You're nothing but a ....e.g. nutcase, mouth bottom etc".	Dozens of voices. Unsure of their sex. They are clusters of neurones with distinct personalities.	Its to do with unresolved parental conflict. Its a fragmented psychic economy which can later be integrated.	The emotional flavour of the voices, they sound hysterical, they love it when I listen.	Irritated.	Listen in & then ignore.	They are trying to get a negative hit, but don't succeed which means I'm strong.
28	M white	31	"Fuck off".	3 male voices.	Trying to drive me mad, persecuting me for being a compulsive gambler & male prostitute.	They make me feel mad and depressed.	Depressed.	Shout back and try to ignore.	That I am worthless.
29	M white	69	Tell me who I am and repeat the names of the people living here. Comment on everything.	1 male could be either God or the Devil.	They are persecuting me for taking the world out of fresh air.	They are always right.	Frustration.	Listen.	I am useless.
30	M white	51	"You'll be punished". "You won't be forgiven if you smoke another cigarette".	2 or 3 voices of both sexes. Could be a girl from previous home, God, Jesus or the Devil.	Punishment for smoking.	Not sure.	Fear.	Ignore them.	Not accessible.

### **3.4.1 Voice Content**

When this was categorised, no participants had a positive content, 16 (53%) had a negative content, eight (27%) had a neutral content and five had both positive and negative content to their voices (17%).

### **3.4.2 Beliefs regarding the identity and sex of the voice**

Twenty-one (70%) of participants were able to identify their voices and nine (30%) were unable. Variability existed in individual specificity concerning both the identification and number of voices heard.

### **3.4.3 Beliefs regarding the purpose of the voice.**

When this was categorised, one participant (3%) construed the voices as benevolent, 15 (50%) as malevolent, seven (23%) as either neutral or uncertain and seven (23%) experienced both malevolent and benevolent voices. For the malevolent voices, 11 participants (37%) saw them as punishing for a past misdemeanour, 11 participants (37%) saw them as persecuting, that is, the punishment was unjust, and 8 (27%) were not able to state the purpose, or felt their voices either had no purpose or this was not applicable. For the benevolent voices, one participant (3%) saw his good voice as protecting against the bad voice, one (3%) saw them as developing knowledge, nine (30%) saw them as helping, advising, guiding, or encouraging whilst the other 19 participants did not report any purpose for the more benevolent of their voices, or did not report having any benevolent voice and therefore this was not applicable.

### **3.4.4 Evidence given for the purpose of the voice**

A variety of responses were given to support people's beliefs about the purpose of the voice. There was a high degree of uncertainty and this often relied on the prompts suggested in the semi-structured interview. This was not categorised, although categorisations were later drawn from the evidence.

### **3.4.5 Affective Responses**

These were categorised by the researcher. No participant had a positive affective response, 28 (93%) participants had a negative affective response, one had a neutral, and one had both positive and negative affective responses.

### **3.4.6 Behavioural Responses**

For the behavioural responses, using the definitions of Chadwick and Birchwood (1994) the usual response to their voices was to engage (elective listening or compliance) for 1 participant (3%), resist (argue, shout, non-compliance or reluctant compliance) for 3 participants (10%), indifference for 9 participants (30%), and more than one of these type of strategies for 17 participants (57%).

### **3.4.7 Personal Meaning Activated**

Twenty four participants were able with the aid of the interviewer to access a personal meaning. This was positive for 2 participants (6% of sample), neutral for 2 participants (6%) and negative for 20 of the participants (88%).

### **3.4.8 SUMMARY OF AIM 1**

Descriptive data were collected on the contents of participants' voices, their beliefs about the voices identity, purpose and meaning and evidence for this together with their affective and behavioural responses (see table 3). What is evident from this data, is the predominantly negative content to people's voices and the extremely negative personal meanings of many of the voices, which have previously not been systematically explored.

### 3.5 RELIABILITY OF METHODOLOGY

***Aim 2: To examine the reliability of the methodology.***

#### 3.5.1 Hypothesis 1:

*The methodology used is reliable, both test re-test and inter-rater.*

In order to assess the reliability, categories were formed based on the work of Chadwick and Birchwood (1994) (see appendix f). Kappa was chosen as a good method of assessing reliability on categorical data, since it takes into account the extent of disagreement (Hall, 1974). SPSS for windows does not quote significance levels for Kappa Coefficients and statistical advice was to interpret the acceptability of Kappa according to Landis and Koch (1977), who provided a range of cut-offs for acceptable levels of agreement. In the case of Kappa, as with other correlations, statistical significance alone is not informative since agreements may be significant (i.e. not occur by chance) but may not indicate high levels of agreement.

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##### 3.5.1.1 Inter-rater Reliability Checks

Using nine interviews which were audio-taped, a series of Kappa coefficients were calculated for the categorical items of the cognitive assessment of voices, with the second ratings to test the inter-rater reliability of the categories of the beliefs were reliable, carried out by an independent rater (see table 4). All categories except the "events attributed to the voice" showed substantial to perfect agreement. Where agreement was almost perfect to perfect, the inter-rater reliability can be viewed confidently, whereas substantial agreement needs to be viewed with some caution, and slight agreement with a lot of caution. For one category, Kappa coefficients were not computable as there was only one row of response categories used. This was the variable "control", i.e. the ability to influence the onset/termination of the voices. For this category there was agreement for 8 out of 9 of the participants, which would suggest high agreement, although caution needs to be exercised as there was very little variability in the responses.

**Table 4: Kappa Coefficients for inter-rater reliability on categorical items, N=9.**

Category & definition (if applicable)	Kappa $\kappa$	Strength of Agreement <sup>c</sup>
CAN THEY IDENTIFY VOICE? (SPECIFICALLY)	1.000	perfect
CURRENT CONTENT :(rated by interviewer)	0.839	almost perfect
VOICES CONSTRUED AS:(by participant)(malevolent/benevolent)	0.830	almost perfect
DO THEY THINK THE VOICES POWERFUL?	0.625	substantial
COLLATERAL SYMPTOMS (EG VISUAL/SENSORY/TACTILE)	1.000	perfect
EVENTS ATTRIBUTED TO THE VOICE i.e. the voice made me.....	0.151	slight
CONTROL, i.e. the ability to influence their onset/offset	--- <sup>a</sup>	8 out of 9 <sup>a</sup>
OMNISCIENCE, i.e. comment on present thoughts/history/predict future	1.000	perfect
COMMANDS?	1.000	perfect
COMPLIANCE WITH COMMANDS?	0.813 <sup>b</sup>	almost perfect
AFFECTIVE RESPONSE (rated by interviewer)	---	perfect
BEHAVIOURAL RESPONSE	0.679	substantial
PERSONAL MEANING (rated by interviewer)	1.000	perfect

<sup>a</sup> Kappa coefficients not computable as only one row of response categories used.

<sup>b</sup> Kappa coefficients not computable as all responses in same category by both raters, hence 100% agreement.

<sup>c</sup> Interpreted according to Landis & Koch (1977).

### 3.5.1.2 Re-test Reliability Checks

Using nine interviews which were re-completed, a series of Kappa coefficients were calculated on items on the cognitive assessment of voices and the PQRST measures, for the initial interview and re-testing, to test whether beliefs and convictions were reliable over a time period of one week (see table 5).

It is evident that the following factors are not reliably stable over a one week time period; 'events attributed to the voice', 'the voice's omniscience' and the PQRST scores on the level of conviction of the voice content and the level of conviction of the personal meaning activated by the voice. Some changes occur in the intensity of the affective response and the reporting of collateral symptoms, whereas the other categories appear reasonably stable over a one week time period (see table 5).



**Table 5: Kappa Coefficients for test re-test reliability on categorical items, N=9.**

Category & definition (if applicable)	Kappa $\kappa$	Strength of Agreement <sup>b</sup>
CAN THEY IDENTIFY VOICE? (SPECIFICALLY)	1.000	perfect
CURRENT CONTENT :(rated by interviewer)	1.000	perfect
VOICES CONSTRUED AS:(by participant)	1.000	perfect
DO THEY THINK THE VOICES POWERFUL?	1.000	perfect
COLLATERAL SYMPTOMS (EG VISUAL/SENSORY/TACTILE)	0.526	moderate
EVENTS ATTRIBUTED TO THE VOICE i.e. the voice made me.....	0.137	slight
CONTROL, i.e. the ability to influence their onset/offset	---	perfect
OMNISCIENCE, i.e. comment on present thoughts/history/predict future	0.400	fair
COMMANDS?	1.000	perfect
COMPLIANCE WITH COMMANDS?	0.827	almost perfect
AFFECTIVE RESPONSE (rated by interviewer)	---	perfect
PQRST (INTENSITY OF AFFECTIVE RESPONSE)	0.419	moderate
BEHAVIOURAL RESPONSE	1.000	perfect
PERSONAL MEANING (rated by interviewer)	0.786	substantial
PQRST (TRUTHFULNESS OF VOICE CONTENT)	0.400	fair
PQRST (TRUTHFULNESS OF PERSONAL MEANING)	0.280	fair

<sup>a</sup> Kappa coefficients not computable as all responses in same category by both raters, hence 100% agreement between test and re-test

<sup>b</sup> Interpreted according to Landis & Koch (1977).

### 3.5.2 SUMMARY OF AIM 2

The cognitive assessment of voices was found to show substantial to perfect inter-rater reliability on all categories other than 'events attributed to the voice' and caution must be exercised when interpreting findings on this category. The assessment was less reliable over a one week time frame, with 56% of the categories being almost perfect to perfect, 19% being moderate to substantial and 25% being slight to fair.

## 3.6 COMPARISONS WITH AN INDEPENDENT SAMPLE

**Aim 3: To compare data collected to that of Chadwick and Birchwood (1994)**

### 3.6.1 Hypothesis 2:

*There will be no difference between the appraisals of voices identified by Chadwick and Birchwood (1994) (i.e. beliefs about identity, power, purpose and compliance) and the appraisals found in this sample.*

In this section, Chi-square tests are used for comparisons with the Chadwick and Birchwood (1994) sample (refereed to as the Birmingham sample in this section).

When the two samples are combined, the total N= 56, appropriates the use of Chi-square with a continuity correction (Siegel & Castellan, 1988, p.123).

3.6.1.1 Beliefs about Omnipotence

In the Birmingham sample, all voices (100%) were perceived as being powerful. In response to the question: “Do you think your voices are powerful?”, 20 (67%) of this sample responded positively whereas 10 (33%) were uncertain or replied in the negative. Although this category was only substantially reliable (inter-rater), when the 3 categories (yes, no, uncertain) were used, when no and uncertain were collapsed into one category to allow for statistical analysis, there was 100% agreement (see table 6).

*Table 6: Chi-square comparing both samples’ responses to the question “Do you think the voices powerful?”*

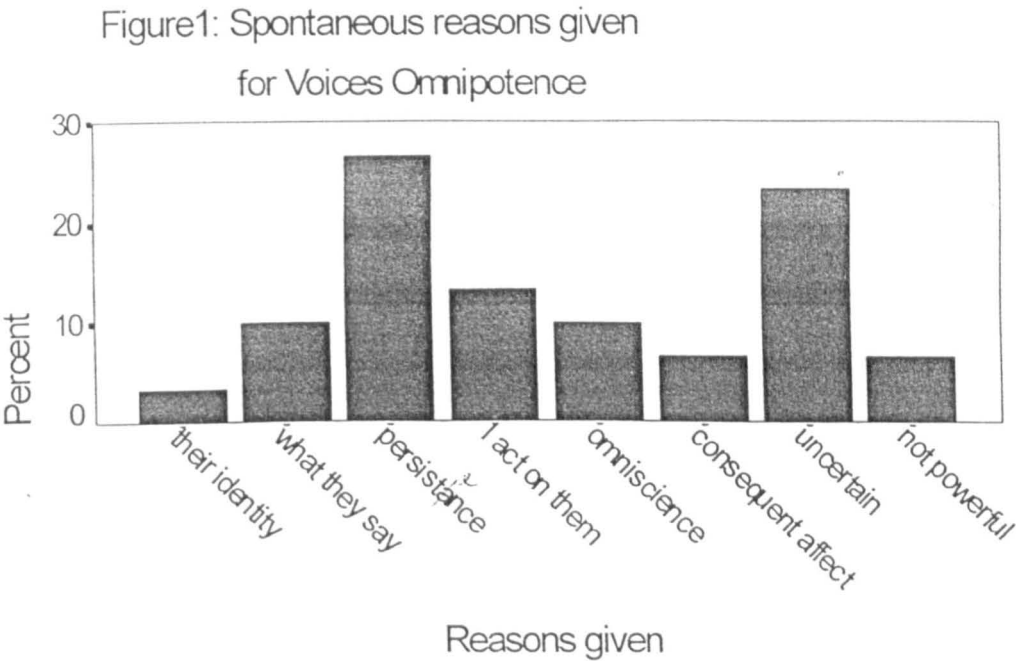
Sample	Are the voices Powerful?	
	Yes	No/ Uncertain
<i>Oxford</i> <i>N=30</i>	20      67%	10      33%
<i>Birmingham</i> <i>N=26</i>	26      100%	0

The use of Chi-square indicated that participants in this sample were significantly less likely than the Birmingham sample to believe in the omnipotence of their voices (Chi-square with continuity correction (1 d.f.)  $\chi^2= 8.4$ ,  $p<.005$ , two-tailed). In response to the question “Why do think your voices are/might be powerful?”, the following, unprompted, responses were given spontaneously from participants in the Oxford sample. The most popular spontaneous response was the voices persistence, which was perceived to be distracting and uncontrollable and was given by eight participants (27%). This was closely followed by an “uncertain” response which was the response of seven (23%) participants. Four (13%) perceived the voices to be powerful because they had acted on their commands. For the other

participants, three (10%) perceived them to be powerful because of the content of the voices, and a further three (10%) because they were “always right” (omniscient). Two (7%) suggested the powerfulness related to how the voices made them feel and one (3%) because of the identity of the voices. Two (7%) participants were certain the voices were not powerful (see table 7 and figure 1).

**Table 7: Spontaneous reasons given for the voices potential power, Oxford Sample, N=30.**

Their identity	Their content	Their persistence	Acting on commands	Their omniscience	Consequent affect	Uncertain	Not powerful
1 (3%)	3 (10%)	8 (27%)	4 (13%)	3 (10%)	2 (7%)	7 (23%)	2 (7%)



Chadwick and Birchwood (1994) quote three things that add to the voices sense of omnipotence: collateral symptoms (i.e. visual, sensory, or tactile hallucinations) in conjunction with the voices, events attributed to the voices and cited as proof of their power (“the voice made me ...[e.g. act upon events]”), and the inability to influence

the onset or offset their voices. These specific prompts were put to the Oxford sample and the following comparisons are shown.

(i) Collateral symptoms

In response to the prompt: “Do you experience other symptoms whilst hearing voices that add to their power?”, 11 (37%) responded “yes”, and 19 (63%) responded “no” (see table 8).

**Table 8: Chi-square comparing both samples' responses to prompts regarding collateral symptoms.**

Sample	Collateral Symptoms?	
	Yes	No
Oxford N=30	11 37%	19 63%
Birmingham N=26	19 73%	7 27%

The use of Chi-square indicated that participants in this sample were significantly less likely than the Birmingham sample to experience collateral symptoms which add to the power of their voice experience (Chi-square with continuity correction (1 d.f.)  $\chi^2= 6.03, p<.05$ , two-tailed).

(ii) Events

In the Birmingham sample, 42% (11 participants) reported events which were attributed to voices and cited as proof of the voices' great power. This category was not found to be reliable (inter-rater) with this sample and the following results must be viewed with caution. For the main rater, 11 (37%) responded “yes” and 19 (63%) responded “no” (see table 9).

**Table 9: Chi-square comparing both samples' responses to prompts regarding events as evidence to the voices.**

Sample	Events attributed to voice?	
	Yes	No
<i>Oxford</i> <i>N=30</i>	11     37%	19     63%
<i>Birmingham</i> <i>N=26</i>	11     42%	15     58%

The use of Chi-square indicated no significant difference between the groups in their reporting of events attributed to the voices which were indicative of the voices' omnipotence (Chi-square with continuity correction (1 d.f.)  $\chi^2 = 0.04$ , n.s., two-tailed).

(iii) Influence over Voices

In response to the prompt: "Are you able to influence the voices onset/termination?", 1 (3%) responded "yes", and 29 (97%) responded "no" (see table 10).

**Table 10: Chi-square comparing both samples' responses to prompts as to whether they could influence the onset/offset of the voices.**

Sample	Influence voices onset/offset?	
	Yes	No
<i>Oxford</i> <i>N=30</i>	1     3%	29     97%
<i>Birmingham</i> <i>N=26</i>	5     19%	21     81%

The use of Chi-square indicated no significant difference between the groups in their reporting of the ability to influence the onset/termination of their voices (Chi-square with continuity correction (1 d.f.)  $\chi^2 = 2.2$ , n.s., two-tailed).

3.6.1.2 Beliefs about Malevolence/Benevolence of Voices

In the Birmingham sample, four broad classes of belief about the voice’s purpose emerged: malevolence, the wish to do evil; benevolence, the wish to do good; both benevolence and malevolence; and uncertain.

In this sample, in response to the prompt: “Do you think your voices want to do harm/good/neither/both?”, 15 (50%) believed the voices were intent on harm, 1 participant (3%) believed the voices wished to do good, 7 (23%) had both malevolent and benevolent voices, and 7 (23%) had doubts about the purpose of the voices (see table 11).

Table 11: How the voices were construed by participants in both samples.

Sample	Voices construed as....?			
	Malevolent	Benevolent	Both	Uncertain
Oxford N=30	15 (50%)	1 (3%)	7 (23%)	7 (23%)
Birmingham N=26	12 (46%)	6 (23%)	5 (19%)	3 (12%)

Chi-square tests were not possible here due to more than 20% of cells with an expected frequency of less than 5. However, it is clear from the data that while similar numbers construed their voices as malevolent, numerically fewer participants in the Oxford sample saw their voices as benevolent and more were uncertain as to the purpose of their voices.

3.6.1.3 Beliefs at odds with content

In the Birmingham sample 31% (8/26) had beliefs about the content of the voices which were directly opposed to their beliefs about the voice’s purpose (i.e. content benign, voices malevolent/ content malign, voices benevolent). This led Chadwick and Birchwood (1994) to suggest that it was factors other than the content of the voice (e.g. beliefs about identity, power, and omniscience) that led to voices being

construed as malevolent or benevolent. For this sample, no participants had beliefs that were at odds with the content of the voice (see table 12).

**Table 12: Chi-square comparing samples as beliefs at odds with the content of the voices.**

Sample	Beliefs at odds with Content	
	Yes	No
Oxford	0	30 100%
Birmingham	8 31%	18 69%

The use of Chi-square indicated that participants in this sample were significantly less likely than the Birmingham sample to have beliefs at odds with the content of their voice (Chi-square with continuity correction (1 d.f.)  $\chi^2= 8.4$ ,  $p<.005$ , two-tailed).

**3.6.1.4 Beliefs about Omniscience**

In response to the prompt: “Does it seem that your voices know a lot about you?”, 22 (73%) responded “yes”, and 8 (27%) responded “no” (see table 13).

**Table 13: Chi-square comparing samples’ responses to the question “Do your voices seem to know a lot about you?”**

Sample	Voices viewed as Omniscient?	
	Yes	No
Oxford N=30	22 73%	8 27%
Birmingham...N=26	26 100%	0

The use of Chi-square indicated that participants in this sample were significantly less likely than the Birmingham sample to view their voices as omniscient (Chi-square with continuity correction (1 d.f.)  $\chi^2= 6.06$ ,  $p<.05$ , two-tailed).

3.6.1.5 Behavioural responses and beliefs about benevolence/malevolence

In the Birmingham sample, where the voices were believed to be benevolent, the behavioural response of all participants with benevolent voices was to engage in the voice (i.e. elective listening or compliance). A chi-square test was carried out to compare with this sample (see table 14).

**Table 14: Chi-square comparing samples’ engagement with benevolent voices (where applicable).**

		Engagement in Benevolent Voice?			
Sample		Yes		No	
Oxford	N=8	5	62.5%	3	37.5%
Birmingham	N=11	11	100%	0	

The use of Chi-square indicated that participants in this sample were similar to the “Birmingham sample in patterns of engagement with benevolent voices (Chi-square with continuity correction (1 d.f.)  $\chi^2= 2.48$ , n.s., two-tailed).

Conversely, where the voices were believed to be malevolent, in the Birmingham sample, the behavioural response of all participants was to resist the voice (i.e. argue/shout, non-compliance or reluctant compliance, distracting from or avoiding situations that bring on the voice). A chi-square test was carried out to compare these response with this sample (see table 15).

**Table 15: Chi-square comparing samples’ resistance over malevolent voices (where applicable).**

		Resistance of Malevolent Voice?			
Sample		Yes		No	
Oxford	N=22	17	77%	5	23%
Birmingham	N=17	17	100%	0	



The use of Chi-square indicated that participants in this sample were similar to the Birmingham sample in their patterns of resistance with malevolent voices (Chi-square with continuity correction (1 d.f.)  $\chi^2= 2.63$ , n.s., two-tailed).

**3.6.1.6 Affective responses and beliefs about benevolence/malevolence**

Where the voices were construed as benevolent, comparisons were made between the samples as to whether there was a positive affective response (e.g. happy, relaxed etc.). For the Birmingham sample, where the voices were believed to be benevolent, 10 out of 11 participants (91%) had positive affect, compared to 1 participant out of eight (12.5%) of this sample (see table 16). The use of Chi-square indicated that participants in this sample were significantly less likely than the Birmingham sample to have a positive affective response to benevolent voices (Chi-square with continuity correction (1 d.f.)  $\chi^2= 8.69$ ,  $p<.005$ , two-tailed).

*Table 16: Chi-square comparing samples' affective response to benevolent voices (where applicable).*

Sample	Positive Affective Response to Benevolent Voice?			
	Yes		No	
Oxford N=8	1	12.5%	7	87.5%
Birmingham N=11	10	91%	1	9%

NB. for the Oxford sample this did not include participants with both benevolent and malevolent voices.

Where the voices were construed as malevolent, comparisons were made as to whether there was a negative affective response (e.g. depression, fear, anger, anxiety etc.). For both samples, all participants responded to malevolent voices with negative affect. Chi-square tests were not possible here due to more than 20% of cells with an expected frequency of less than 5. However, table 17 clearly shows no numerical differences between samples in terms of the affective response to malevolent voices.

**Table 17: Comparison of samples’ affective response to malevolent voices (where applicable).**

Sample	Negative Affective Response to Malevolent Voice?	
	Yes	No
Oxford N=22	22 100%	0
Birmingham N=17	17 100%	0

NB. for the Oxford sample this did not include participants with both benevolent and malevolent voices.

**3.6.1.7 Summary of Hypothesis 2**

To summarise, there were both significant differences and some similarities between the samples. Participants in the Oxford sample were significantly less likely than participants in the Birmingham sample to believe in the omnipotence of their voices, to experience collateral symptoms which add to the power of their voice experience, to have beliefs at odds with the content of their voice, to view their voices as omniscient, and to have a positive affective response to benevolent voices.

There were no significant differences between the groups in their reporting of events attributed to the voices which were indicative of the voices’ omnipotence, the reporting of the ability to influence the onset/termination of their voices, and the behavioural responses to voices (i.e. engagement and resistance). Similar numbers between samples construed their voices as malevolent, but fewer participants in the Oxford sample had benevolent voices. There were no differences between samples in terms of the affective response to malevolent voices.

**3.6.2 Hypothesis 3:**

*There is an association between the content of the voice and the affective response.*

Statistical tests are not reported by Chadwick and Birchwood (1994) to investigate the association between content and affective response. In this study, associations

were considered in these ways. Firstly, it was considered by looking at the categories of content of voice and affective response. However, since the vast majority of voices elicited a negative affective response (93%) (see table 18a) statistical tests are unlikely to reveal any associations between the content and the affective response.

**Table 18a: Participants Affective Response categories by Content categories, N=30.**

CONTENT	AFFECTIVE RESPONSE			
	positive	negative	neutral	both +ve & -ve
positive	---	---	---	---
negative	---	16	---	---
neutral	---	7	1	---
both +ve & -ve	---	5	---	1
TOTAL	0	28	1	1

As can be seen from table 18a, 28 of the participants had a negative affective response to their voices. Of these 28, 16 of the voices had a negative content, 7 had a neutral content, and 5 had both a positive and negative content. For the other 2 participants, one had a voice with neutral content and the affective response was neutral. The other had both positive and negative voices with correspondingly positive and negative affective responses.

A second way of examining associations is to look at the intensity of the affective response across content categories. It was hypothesised that those voices with a negative content may lead to more intense affective responses as measured by the PQRST score on the intensity of the affective response. Again, the limited distribution of the affective response, meant that statistical tests were not applicable here.

Table 18b shows the median PQRST scores for those participants with a negative affective response.

**Table 18b: The Intensity of (Negative) Affective Response scores (PQRST) reported by Content.**

	CONTENT			
	positive	negative	neutral	both
No. participants with negative affective response	0	16	7	5
Intensity of Affective Response (Median PQRST <sup>a</sup> )	---	7.5	8	5

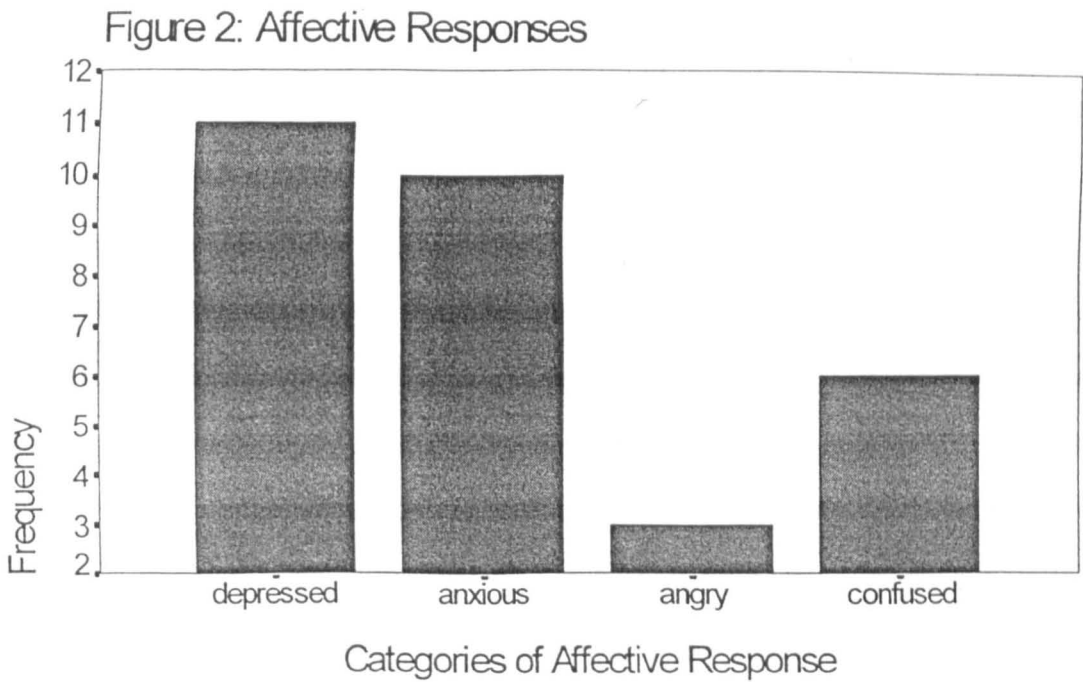
<sup>a</sup>Personal Questionnaire Rapid Scaling Technique.

Finally, a more detailed way of identifying the affective responses was used, by coding the affective responses on key emotions; namely depression, anxiety, anger and miscellaneous (see table 18c and figure 2). The median PQRST score is given for each category.

**Table 18c: Affective responses categorised by key emotions, N=30.**

	DEPRESSION <sup>b</sup>	ANXIETY <sup>c</sup>	ANGER <sup>d</sup>	MISCELLANEOUS <sup>e</sup>
No. participants	11	10	3	6
Intensity of affective response (Median PQRST <sup>a</sup> score)	6	9	5	6
Range PQRST score	4-9	3-9	4-7	2-9

<sup>a</sup>Personal Questionnaire Rapid Scaling Technique; <sup>b</sup>Depression including unhappy, sad, suicidal; <sup>c</sup>Anxiety including distress, fear, worry; <sup>d</sup>Anger including irritation; <sup>e</sup>Miscellaneous Category including frustrated, stupid, embarrassed, bemused.



3.6.2.1 Summary of Hypothesis 3

It is difficult to test for associations between the content of the voice and the affective response due to the large number of participants reporting a negative affective response. It is not possible to reject the null hypothesis.

3.6.3 Hypothesis 4:

*There is an association between the belief in the content of the voice and the affective response.*

Again, for this hypothesis, a statistical test of association is unlikely to be significant as the affect is predominantly negative.

An alternative way of examining the relationship is to correlate both the PQRST scores of the intensity of the affective response and the belief in the truthfulness of the content of the voice. Spearman Correlation Coefficient showed these two variables to be significantly but moderately correlated,  $r=.38$ ,  $p<.05$ . The null hypothesis can therefore be rejected, there is a moderate association between the belief in the content of the voice and the affective response.

3.6.3.1 Summary of Hypothesis 4

There is a moderate but significant association between the belief in the content of the voice and the affective response.

3.7 EXTENDING THE ASSESSMENT

*Aim 4: To extend the assessment by exploring the importance of other variables.*

The cognitive assessment of voices was extended by considering the personal meaning that the voice activated and its congruence with the self-esteem. Personal meaning of the voice was accessed by the use of thought chaining (e.g. Burns, 1980) (see table 3 for descriptive data on personal meanings). This was categorised into positive, negative or neutral personal meanings (see table 20). It was not always possible to activate a personal meaning with some participants, and this was categorised as none. The degree of conviction of the personal meaning activated was self-rated with the PQRST measures.

*Table 20: Personal Meaning activated, N=30.*

PERSONAL MEANING ACTIVATED BY THE VOICE			
positive	negative	neutral	none activated
2	20	2	6

3.7.1 Hypothesis 5:

*There is an association between the personal meaning activated by the content of the voice and the affective response.*

Again, statistical tests are unlikely to reveal any significant differences as a large proportion of the affective responses were categorised as negative. For the 28 participants with a negative affective response, personal meanings were accessed for 22. Of these 22 personal meanings, 18 were negative, 2 were positive and 2

were neutral. For the 2 other participants, 1 with a neutral affective response and 1 with both positive and negative affective responses, the personal meaning activated was also negative (see table 21).

**Table 21: Personal Meaning activated by Affective Response Category, N=30.**

AFFECT CATEGORY	PERSONAL MEANING ACTIVATED			
	positive	negative	neutral	none activated
positive	---	---	---	---
negative	2	18	2	6
neutral	---	1	---	---
both	---	1	---	---

Associations were examined by correlating both the PQRST scores of the intensity of the affective response and the belief in the personal meaning activated by the voice. Spearman Correlation Coefficient showed these two variables not to be significantly correlated,  $r=.04$ .

**3.7.1.1 Summary of Hypothesis 5**

It is therefore not possible to reject the null hypothesis, there is no evidence of a relationship between the personal meaning activated and the affective response.

**3.7.2 Hypothesis 6:**

*There is a stronger association between the level of conviction in the personal meaning and the affective response than for the level of conviction in the content and the affective response.*

Spearman Correlation Coefficients showed the intensity of the affective responses to be significantly correlated to the level of conviction of the truthfulness of the voice  $r=.38$ ,  $p<.05$ , but not significantly correlated to the level of conviction of the personal meaning activated  $r=.04$ . Interestingly, the level of conviction in the truthfulness of the content of the voices and the level of conviction in the personal meaning activated were highly correlated,  $r=.54$ ,  $p<.01$ .

### 3.7.2.1 Summary of Hypothesis 6

There is no stronger relationship between the level of conviction in the personal meaning and the affective response than for the content of the voice and the level of conviction in the content and the affective response and the null hypothesis cannot be rejected.

### 3.7.3 Hypothesis 7:

*There is an association between the personal meaning activated by the content of the voice and a person's self-esteem.*

Personal meaning activated by the voices was accessed by the interviewer's use of thought chaining (where possible). Self-esteem was measured by the self-esteem and dysfunctional attitude scale.

The majority of participants with whom a personal meaning of the voice was activated had a negative personal meaning, which again makes statistical comparisons unlikely to show any significant differences. Table 22a tabulates the mean and range of scores from the self-esteem scale and dysfunctional attitudes scale.



**Table 22a: Mean and range of self-esteem and dysfunctional attitude scale scores, by personal meaning activated, N=30.**

	PERSONAL MEANING ACTIVATED CATEGORY			
	positive	negative	neutral	none
no. participants	2	20	2	6
Mean SE <sup>a</sup>	170	99	107	115
Range SE	---	42 - 172	71 - 143	103 - 124
Mean DAS <sup>b</sup>	178	147	139	144
Range DAS	---	107 - 184	127 - 151	120 - 174

<sup>a</sup>Self-Esteem Scale, <sup>b</sup>Dysfunctional Attitude Scale NB. Ranges not included where missing data led to  $n = 1$ .

Relationships between level of conviction of personal meaning and self-esteem were investigated using Spearman Rank Correlation tests. This was only possible with those participants who were able to access a personal meaning.

As the majority of participants had a negative personal meaning, correlations were examined with this sub-section of participants (N=20). Results are shown in the correlation matrix (table 22b). Although the dysfunctional attitude scale and self-esteem scale were highly and negatively (this should be so because they are scored in opposite ways) correlated,  $r = -.54$ , (one-tailed)  $p < .01$ , the self-esteem scale was not correlated to the degree of conviction in the personal meaning activated by the voice,  $r = -.38$ , (one-tailed) n.s. Personal meaning activated was highly correlated to the dysfunctional attitude scale,  $r = .60$ , (one-tailed)  $p < .005$ .

**Table 22b: Correlations between self-report questionnaires and the degree of conviction in the personal meaning the voices activates, by Spearman Rank Correlation Test, N=20.**

	Self-esteem scale	Dysfunctional Attitude Scale
Dysfunctional Attitude scale	-.54 *	
Personal Meaning Activated	-.38 ns	.60 **

\* $p < .01$ , \*\* $p < .005$

### 3.7.3.1 Summary of Hypothesis 7

There is an association between personal meaning and self-esteem as measured by the DAS, but not as measured by the SE. Therefore, the null hypothesis can be rejected.

### 3.7.4 Hypothesis 8:

*There is a relationship between distress and personal meaning activated.*

Distress from voices was indicated by the category of affective response and then self-rated for intensity of the affective response. It may also be considered to be indirectly measured by scores on the Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI). Personal meaning activated by the voice was accessed by the interviewer's use of thought chaining. Table 23a tabulates the median intensity of the affective response, and the mean and range of scores from the BDI and BAI, by the personal meanings activated (where possible).

**Table 23a: Mean and range of BDI and BAI scores, by personal meaning activated (where applicable).**

	PERSONAL MEANING ACTIVATED CATEGORY			
	positive	negative	neutral	none(N/A)
No. of participants	2	20	2	6
Median Intensity of affective response	5.5	7.5	6.5	6
Mean BDI <sup>a</sup> score	12	24	12.5	16
Range BDI score	---	3 - 54	1 - 24	5 - 32
Mean BAI <sup>b</sup> score	4	19	11	20
Range BAI score	---	0 - 49	4 - 18	6 - 49

<sup>a</sup>Beck Depression Inventory, <sup>b</sup>Beck Anxiety Inventory.

NB. Ranges not included where missing data led to  $n = 1$ .

Relationships between distress and personal meaning as measured by the SE and DAS scales were also investigated using Spearman Rank Correlation tests on the intensity of the affective response, BDI and BAI scores. As the majority of participants had a negative affective response and the area of interest is the distress of voices, correlations were only examined with the sub-section of participants with a negative affective response who were able to access personal meaning (N= 25). The intensity of the affective response was significantly correlated with BDI scores,  $r = -.41$ , (one-tailed)  $p < .05$ , and BAI scores,  $r = .35$ , (one-tailed)  $p < .05$ , suggesting that these measures are to some extent an indicator of the distress of voices. The intensity of the affective response was not significantly correlated with the DAS, or the SE scale, although this was almost significant,  $p = .056$ . SE scores were highly correlated with both the BDI and the BAI (see table 23b for full range of results).

**Table 23b: Correlations between anxiety, depression and self-esteem on distress and personal meaning and the intensity of the affective response, by Spearman Rank Correlation Test.**

	BDI <sup>a</sup>	BAI <sup>b</sup>	SE <sup>c</sup>	DAS <sup>d</sup>
BAI	.60 ***			
SE	-.63 ***	-.51 **		
DAS	-.17 ns	-.14 ns	-.41 *	
Intensity of Affective Response	.40 *	.35 *	-.33 ns	-.03 ns

\* $p < .05$ , \*\* $p < .005$ , \*\*\* $p < .001$

<sup>a</sup>Beck Depression Inventory, <sup>b</sup>Beck Anxiety Inventory, <sup>c</sup>Self-esteem scale, <sup>d</sup>Dysfunctional Attitude scale.

### 3.7.4.1 Summary of Hypothesis 8

Distress as indirectly measured by the BDI and BAI was significantly correlated with self-esteem as measured by the self-esteem scale, but as directly measured by the PQRST intensity of the affective response, this was not significantly correlated with the measures of self-esteem.

### **3.7.5 SUMMARY OF AIM 4**

This aimed to extend the work of Chadwick and Birchwood (1994) by looking at the personal meaning the voice activates and the association of this to the affective response and self-esteem. As the majority of participants had a negative affective response, the association between a range of affective responses and other variables could not be investigated. However some interesting and statistically significant results were found. The level of conviction of the personal meaning activated was significantly related to the level of conviction in the content of the voice. Personal meaning activated was significantly correlated to scores on the DAS. Distress as measured by the BDI and BAI was significantly correlated with self-esteem as measured by the self-esteem scale, but as directly measured by the PQRS intensity of the affective response, this was not significantly correlated with the measures of self-esteem.

## **SECTION 4**

## **DISCUSSION**

## **4. DISCUSSION**

### **4.1 OVERVIEW**

Initially, the research results will be summarised by the four aims. These results are then discussed in the light of previous research findings and current theory, focusing on the key themes of: methodological issues, the similarities and differences when compared to an independent sample and the cognitive model of auditory hallucinations. These points will be brought together by outlining clinical implications and avenues for future research. Finally, the main conclusions from the study will be summarised.

### **4.2 SUMMARY OF RESULTS**

#### **4.2.1 Descriptive Data**

The first aim was to collect a set of data consisting of a cognitive assessment of voices. Using the assessment developed by Chadwick and Birchwood (1994), descriptive data was collected from thirty participants concerning their experience of hearing voices. The data included the content of voices, beliefs about the voices' identity and purpose, evidence for this, and affective and behavioural responses. In addition to this, data were collected on demographic details and standardised measures.

What is evident from this data, is the predominantly negative content of participants' voices; which included threats, commands to harm themselves or others, personal comments about appearance or personal worth and insults. Fifty three per cent of participants' voices were negative in content, 27 per cent were neutral content, 17 per cent were both positive and negative and no participants' voices had a positive content only. Seventy per cent of participants were able to identify their voices.

In terms of the purpose of the voice, half the sample construed the voices as malevolent, 23 per cent were unsure of the voices' purpose and a further 23 per cent construed them as both benevolent and malevolent. Only one participant construed

the voices as benevolent alone. Evidence given for the voices' purpose varied amongst participants, with many being initially uncertain until prompted by suggestions in the assessment.

Affective responses were categorised by the researcher. The majority of participants (93 per cent) had a negative affective response to their voices with feelings predominantly ranging through anger, depression, fear, and anxiety. None of the participants had a positive affective response alone, although one participant had both positive and negative affective responses and one had a neutral affective response. In terms of behavioural responses to the voices, more than half the participants (57 per cent) would respond in a number of different ways to their voices. For those who used mainly one strategy, this consisted of one participant who engaged in the voices, one who resisted and nine who were indifferent.

For those participants who were able to access a personal meaning (N=24), it was negative for 20 of these participants (88 per cent), positive for two, (6 per cent) and neutral for two.

#### **4.2.2 Reliability of the Methodology**

The second aim of the research was to examine the reliability of the methodology. The cognitive assessment of voices was found to show substantial to perfect inter-rater reliability on all categories other than for the category *'events attributed to the voice'*.

The assessment was less reliable over a one week time frame, with 56% of the categories being almost perfect to perfect, 19% being moderate to substantial, and 25% being slight to fair. Categories that were not deemed to be as test-retest reliable, were: *'events attributed to the voice'*, *'voices construed as omniscient'*, and the PQRST measures

### 4.2.3 Comparisons with Independent Data

The third aim was to compare data collected to that of Chadwick and Birchwood (1994). There were both significant differences and a number of similarities between the samples. Participants in the Oxford sample were significantly less likely than participants in the Birmingham sample to believe in the omnipotence of their voices, to experience collateral symptoms which add to the power of their voice experience, to have beliefs at odds with the content of their voice, to view their voices as omniscient, and to have a positive affective response to benevolent voices.

There were no significant differences between the groups in their reporting of events attributed to the voices which were indicative of the voices' omnipotence, the reporting of the ability to influence the onset/termination of their voices, and the behavioural responses to voices (i.e. engagement and resistance). Similar numbers between samples construed their voices as malevolent, but fewer participants in the Oxford sample had benevolent voices. There were no differences between samples in terms of affective responses to malevolent voices.

Chadwick and Birchwood (1994) do not report formal statistical tests of association between the affective responses, voice content, and degree of conviction in the voice content. However, it was hypothesised that there would be associations between these variables in this sample. In the event, it was not statistically viable to test for associations between the content of the voice and the affective response, due to the large number of participants reporting a negative affective response. It is therefore not possible to reject the null hypothesis (that there is no association between the affective response and the content of the voice). Regarding associations between the affective response and degree of conviction in the voice content, there was a moderate but significant association between these two variables.



#### 4.2.4 Extending the assessment

The fourth aim was to extend the assessment by looking at the personal meaning that the voice activated in participants, and the associations of this to the affective responses and self-esteem; with a view to developing the cognitive model of voices.

Since the majority of participants had a negative affective response, the association between a range of affective responses and other variables could not be investigated. Notwithstanding, several interesting and statistically significant results were found.

There was no evidence of a relationship between the personal meaning activated and the affective response, but the level of conviction in the personal meaning activated was significantly related to the level of conviction to the content of the voice.

There was an association between personal meaning and self-esteem only as measured by the dysfunctional attitudes scale (Weissman & Beck, 1978). Finally, distress as measured by the Beck Depression and Beck Anxiety inventories was significantly correlated with self-esteem as measured by the Robson (1989) self-esteem scale. Distress, as directly measured by the PQRST intensity of the affective response, was not significantly correlated with the measures of self-esteem.

Regarding the four aims of this research, the first three aims were achieved. A set of data consisting of cognitive assessments of voices were collected and the reliability of the methodology used was examined. This data set was then compared with the data set of Chadwick and Birchwood (1994). The fourth aim of this research was to extend the assessment to explore the role of personal meaning, the congruence of this with a person's self-esteem and the association of personal meaning to the affective response. This was not achieved due to the preponderance of negative affective responses in this sample. Nevertheless, a number of interesting results were found, and will be discussed in later sections.

### 4.3 METHODOLOGICAL ISSUES

Evidently, this study has notable limitations. These relate to sampling, the cognitive assessment itself, and the process issues in the research.

#### 4.3.1 Sampling

The first sampling issue concerns the mode of recruitment. Although auditory hallucinations are a common symptom for people with a diagnosis of schizophrenia, the incidence of schizophrenia in the population is less than 1 per cent. Correspondingly the pool of potential participants is quite small. Further to this, people with a diagnosis of schizophrenia tend to be over-researched and understandably may not want to participate. Most importantly, the potential to trigger an episode of schizophrenia by environmental stressors (e.g. Leff *et al.*, 1983) promotes understandable concerns among health professionals as to a clients' suitability to participate in clinical research. All these factors were borne out in the recruitment phase and it was apparent that the selection of participants was not random, but depended upon a combination of the above factors. It is therefore possible that the participants were not representative of the population of people with psychoses who experience auditory hallucinations. This type of sampling (non-probability or convenience sampling) carries a risk of bias (Kalton, 1983).

Balanced against the above factors is the high response uptake (76 per cent) to direct written communication with participants (Schuman & Kalton, 1985). In addition, rates of attrition and item non-response were very low.

In terms of sample description, practicalities precluded a formal exploration of the representativeness of the sample. Further, Chadwick and Birchwood (1994) provided limited data describing the sample. From clinical experience, the current data were not unusual in terms of demographic information and affective responses. Compared to norms, the sample was (on average) reasonably insightful (Birchwood *et al.*, 1994), moderately depressed and anxious (Murphey *et al.*, 1984) and had low

rates of self-esteem (Robson, 1989). These affective results are not untypical of a psychotic group referred for therapy (Garety, 1996).

Further sampling concerns include the method of interviewing. A number of factors exist which can cause bias in face to face interviewing: the setting (which due to practicalities, was not consistent), interviewer bias and the characteristics of the interview schedule used (see Schuman & Kalton, 1985). Although every attempt was made to standardise the approach, the nature of the subject matter required obvious degrees of flexibility. Whilst such a flexible approach was ethically correct, it nevertheless added an additional bias to the interview.

A final factor that warrants discussion is the sample size. Given that this study was only the second of its kind and that its numbers exceeded that of the first study, the sample size would appear adequate. Given the lack of variability in the affective responses, the sample may have benefited from greater numbers. However, considering the difficulties in recruitment, a larger sample would not necessarily rule out the sampling bias (Kalton, 1983).

#### **4.3.2 Adequacy of Assessment Schedule**

The second methodological limitation of this research concerns the adequacy of the assessment schedule. Such a schedule can be used in a biased manner, for example, by suggesting possibilities rather than prompting ideas from the participant. There is no information in the Chadwick and Birchwood (1994) paper as to how much prompting was required by, or given to participants. In this study, the aim was to always ask open questions and gain spontaneous responses before prompting. This approach often resulted in a wider variety of responses (see for example, the reasons given for the voices power), and/or a greater degree of uncertainty than was reported by Chadwick and Birchwood (1994).

Some of these difficulties were borne out in the reliability checks on the category '*events attributed to the voice*'. On the whole there was good inter-rater reliability suggesting few biases were operating on the interview schedule. However,

there were further sampling biases in those who self-selected for audio-taping and re-testing.

Re-testing did not yield such high reliability, predominantly due to changes on the PQRST measures (these were not inter-rated). It is not possible to tell whether the poorer re-test reliability is due to the measure used being ambiguous, or whether it relates to genuine fluctuations. There is evidence that psychotic symptoms fluctuate over time (Garety & Hemsley, 1994), it appears probable that the lower reliability on some items (e.g. PQRST scores) reflects this fluctuation.

It became apparent to the interviewer, that the assertion required on the PQRST did not accommodate the uncertainties and fluctuations participants had about their feelings and beliefs. For the personal meanings, this was often a novel way of exploring beliefs and feelings. This gives rise to two concerns. Firstly, how adequate is thought-chaining in accessing underlying beliefs? Thought-chaining was developed for clinical purposes and the lack of reliability data make its adequacy difficult to ascertain. However, once accessed, most participants did endorse the possibility of its accuracy to some extent. This was not always the case and certainly one participant, who accessed the belief that she was 'neglectful', commented that this was not accurate, and did not endorse it in any way on the PQRST.

Secondly, such a method of exploration can be quite powerful in its exploration of underlying core beliefs about the self. Guarded self-esteems (see Harder, 1984) often serve to protect against extremely negative self-evaluations and such explorations may be more appropriately explored in the domain of the therapy setting.

The combination of a necessity to standardise procedures whilst remaining as objective as possible, combined with the need to explore highly emotive and meaningful constructs, does not, necessarily, fuse together well. This raises important process issues in the current research.

### 4.3.3 Process Issues

The most important process issue is that of ethics. Is it justifiable to access a participants' highly emotive self evaluations for the purposes of clinical research? This was considered prior to submission to the ethics committee and a number of safeguards and considerations were employed. An important consideration was the clinical experience of the researcher in working with this client group, together with the importance of exercising clinical judgement as to potential distress. It was anticipated that personal meanings may not be accessed with a number of participants, as it is known that the process of engagement can be lengthy with this client group (Fowler *et al.*, 1995). Safeguards included the cessation of exploration at any sign of distress, the option of contacting others involved in the participants care, or referring on for therapy.

In the actual event, most participants engaged easily and personal meanings were more readily accessible than anticipated. Indeed, a number of participants had already formed links to personal meaning prior to contact with the researcher. For example, participant 4 had voices calling him '*a whistler*'. When the researcher asked what this meant (wondering if it was perhaps a colloquial expression), he replied: '*it just means someone who whistles a lot, but this makes me think I'm a useless person*'. Therefore, this participant had already made the connection between the voice content, and self-evaluation this activates.

Participant 4 also provides an example of a follow-up response: Having commented on a desire for further opportunities to verbally explore his voice experience, at his request, and with permission, an assessment letter was sent to his Psychiatrist and community psychiatric nurse (CPN), suggesting a referral to clinical psychology. Similar referrals were made for two other participants and three further participants requested feedback to be given to CPNs. In addition, general advice based on clinical experience was often shared with participants at the end of interviews, and one participant (with a recent diagnosis), who reported a general lack

of information, was provided with literature designed specifically for this purpose (Birchwood & Smith, 1991).

The issue of referring to clinical psychology poses a further dilemma. Outcome data on psychological interventions for voices are to date, limited in success at reducing both voices and the distress they can cause. This was communicated to participants, as it was part of the research rationale. However, it has been noted that clients often value the opportunity to make tentative connections between the content of their voices and their own histories (Chadwick *et al.*, 1996). Further, focusing on the voices can have the effect of raising self-esteem for participants (Haddock *et al.*, 1996). It is possible to speculate that this study had an intervening element to it, indeed the majority of participants reported valuing the opportunity to discuss in detail their experience of hearing voices.

This raises a further important issue namely, the impact on the researcher of attending to the participants' (often) distressing experiences. The necessity for support and supervision for clinicians working with this client group has been documented (see Kuipers, Garety, & Fowler, 1996). It is suggested that difficulties may well have been inflated in this research context, since the opportunity for the researcher to offer the necessary long-term therapeutic help to participants was not possible. Support and supervision was invaluable in this context.

#### **4.4. COMPARISON WITH AN INDEPENDENT SAMPLE**

Having raised a number of methodological concerns, it is pertinent to link these back to the original study of Chadwick and Birchwood (1994) and so discuss the similarities and differences with the present data set.

One difference between the two samples is the extent of the negative affective responses in this sample which were not dependent upon the belief as to the voices' malevolence or benevolence. In the Chadwick and Birchwood (1994) sample, affective responses corresponded very closely to beliefs about the voices' malevolence and benevolence. Further, in the Chadwick and Birchwood data the

voice alone was not always responsible for the class of belief; Some participants who experienced a negative content to their voices notwithstanding viewed their voices as benevolent, whereas others experiencing a positive content viewed their voices as malevolent. These findings were not corroborated in this research. For the present sample, it appears that the voice experience in itself is enough to provoke negative feelings within participants, which also contrasts the 'coping strategy' approach which assumed a random affective and behavioural response to hallucinations (Falloon & Talbot, 1981; Tarrier, 1987). These findings only allow for speculations about the voice experience for participants in this sample, since the distribution of data did not allow for formal statistical exploration as to whether this could be attributed to content, beliefs or personal meaning. It is not always the case that voices provoke a negative affective response and many voice hearers do not come into contact with psychiatric services (Romme & Escher, 1989). Consideration may be given to the premise that the experience of voices in conjunction with a psychotic diagnosis is in itself distressing; the potential distress of auditory hallucinations has been documented (Breier & Strauss, 1983; Garety & Hemsley, 1987). An alternative explanation could be that this sample over-represented those who experience distress with voices. Given the difficulties in recruiting to the study (discussed earlier) it seems more likely that the opposite were true and the current research sample represented a group of people who were functioning well, despite their voices.

This begs the question as to whether there were important sample differences between the two studies. This was not formally examined as Chadwick and Birchwood provide limited data. However, as previously discussed, viewing of the available data does not indicate major differences in terms of age, diagnosis and medication details. There was a slightly higher proportion of males in the present sample. One could also speculate about the effects of receiving innovative services within the Birmingham research centre. One difference that would have been interesting to explore, given adequate data, is the number of years hearing voices. In this sample it ranged from six months to forty years. Chadwick and Birchwood (1994)

only report that participants had been hearing voices for at least two years prior to the study. It is known that psychotic symptoms are prone to fluctuations (Garety & Hemsley, 1994) and it could be speculated that the beliefs related to the experience of hearing voices change over the years. Indeed participant 1 said that he previously viewed his voices as powerful but, after so many years, he now saw them as persistent and depressing. This sense of resignation and withdrawal was apparent for other participants and may explain differences between the samples in the beliefs about omnipotence and omniscience, both of which were less readily advocated in this sample. This tentatively links to another apparent difference between this sample and that of Chadwick and Birchwood (1994) in that, the current sample lacked the self-exploration necessary to make sense of their experiences. Contrary to this, it is evident that the nature of peoples experiences of hearing voices was highly personal and emotive and often connected to early traumas and unfulfilled ideals (c.f. Romme & Escher, 1996).

Viewing the two data sets as a whole, it is important to acknowledge similarities in themes of benevolence and malevolence and within these categories of belief; themes of punishment, persecution and protection. Balanced against this are the themes of omnipotence and omniscience which were not so readily advocated in this sample. It is speculated that the themes emerging from the data sets provide an interesting way forward to understanding peoples experiences of hearing voices but, the categories discussed, may not encapsulate the whole range of considerations required in the complex and individual experiences of those who hear voices. This calls into question the explanatory power of the cognitive model proposed by Chadwick and Birchwood (1994) and whether the current research adds to the model in its attempt to explore the wider considerations of self-evaluations and the role of voices in their activation.



#### 4.5 DEVELOPING THE COGNITIVE MODEL OF VOICES

Chadwick and Birchwood (1994) draw from a cognitive model of depression (Beck *et al.*, 1979) to understand the cognitive model of voices. Their research emphasised beliefs about the voice, as opposed to the content of the voice, as mediating the affective and behavioural responses. Their model did not explore these factors with statistical testing, nor did it incorporate the role of self-esteem into this formulation. The current research aimed to consider the role of the personal meanings or self-evaluations that the voice activates for a person, their congruence with self-esteem and the role of these factors in the affective and behavioural responses. Whilst low numbers prevent a detailed analysis, they do not preclude the possibility of speculating about the importance of the above factors.

This study highlights the distressing experience that hearing voices can cause for people with psychoses and reinforces research which suggests that auditory hallucinations can be distressing (Sartorius *et al.*, 1974; Breier & Strauss, 1983; Garety & Hemsley, 1987). However, it is known that voices do not always elicit a negative affective response (Romme & Esher, 1989) and it may be necessary to analyse voices of people with positive affective responses, outside of those with psychosis.

In this study the affective responses were not always understandable in the light of beliefs about the purpose of the voice. This research does not add to an understanding of a cognitive model of voices that gives cognition primacy over affect. In terms of reviews within the cognitive model (see Gilbert, 1984), this model may add weight to more recent reciprocal models suggesting that affect can strengthen cognitions. It could be that with numerous years of hearing voices, the persistence and lack of ability to exercise control over the voices have led to a negative affect, which in turn has caused a resignation to the beliefs about the voices purpose and a sense of helplessness (Seligman, 1975), so adding to a predominantly negative affect to the voices.

That self-esteem and personal meaning have a role in the model would seem apparent. Predominantly participants in this sample were largely consistent in that, they had a negative content to their voice, viewed their voices as malevolent, had negative affective responses and personal meanings, were moderately distressed and had low levels of self-esteem. Although it is apparent that the purpose of the voice (malevolent or benevolent) is an important variable, as is the degree of conviction to the content of the voice, it is not possible from this research, to make any claims about the relative importance of each of these variables, since uneven distribution of data did not allow for wider statistical comparisons. Researchers and clinicians are increasingly recognising the potential role of self-esteem (Bentall *et al.*, 1994) and using thought chaining to access the negative self-evaluations (Chadwick *et al.*, 1996) in the therapeutic forum.

#### **4.6 CLINICAL IMPLICATIONS**

The clinical aim of this research was to develop the cognitive model of auditory hallucinations to allow subsequent testing of this model and the development of psychological treatment. Although this was not fully achieved, this study highlights a number of important clinical implications. These centre around the issues regarding the distressing nature of voices, the importance of clinicians developing services for these clients, and the need to develop current knowledge regarding the impact of voices.

Evident from this study and consistent with previous literature, is the fact that voices can be distressing (e.g. Garety & Hemsley, 1994). This has a number of important implications for clinical practice, given that the role of clinical psychologists is to alleviate symptoms that cause distress to clients. Obviously, this does not deny the role of neuroleptic medication which has made significant advancements in the alleviation of symptoms for many clients. However, the current state of treatment for most patients usually involves neuroleptic medication and psychological treatments may only be considered after the failure of such treatments. Considering the desire

of this sample to discuss their experiences and the value they reported from having the opportunity to discuss their voices with a understanding listener, suggests that the aforementioned approach may not be the most effective. It has already been noted that some participants in this sample had been troubled by voices for many years. It could be that a more proactive approach of offering psychological interventions in earlier psychotic episodes may reduce levels of distress that, in turn, could have arisen after a long history of experiencing voices. Commenting on the process of the research interviews, the need to have their distress acknowledged was pertinent for many participants who appeared to engage well from the outset. The interview allowed for the exploration of the content of their voice experiences, and their views and beliefs about them and how they related to past experiences. It has been advocated that the opportunity to explore the connections of their voices to their histories is of significant importance for clients (Chadwick *et al.*, 1996). The lack of these opportunities may add to the extremely low self-esteem of this sample, which are on average lower than both normal and psychiatric controls (Robson, 1989). In a group of patients who tend to have low self-esteem (Haddock *et al.*, 1996), any treatment that alleviates this should be viewed as clinically significant and worthwhile, especially since the risk of suicide is high for this client group (see Briera *et al.*, 1991).

This suggests a number of roles for clinical psychologists in their work with people who hear voices. These can be divided into the core skill areas of clinical psychology namely, clinical practice, training and research.

Current clinical work is clearly of value and is increasingly being directed to exploring peoples self-concepts through the use of thought chaining (see Chadwick *et al.*, 1996). Thorough assessment and understanding of this is crucial to the therapeutic process. It reinforces the need for a combined approach to treatment, tailored to the individuals needs after thorough assessment and engagement (see Haddock & Slade, 1996).

Further implications include the dissemination of this knowledge to other professionals involved in the care of people with psychoses. A number of the people in this sample were considered to be relatively 'well' yet evidently had needs beyond those which were being met by services. Developments in cognitive behavioural therapies for psychoses are still in their infancy yet their importance needs to be disseminated to staff. Inevitably within services, interventions with limited efficacy need to be balanced against resource constraints. Considering the current financial state of the NHS, such constraints, together with the knowledge of the long process of engagement and treatment which is often required does not suggest an easy application of cognitive therapy for voices. The need for continued research to develop models and subsequent treatments should be emphasised.

#### **4.7 IMPLICATIONS FOR FUTURE RESEARCH**

The need for continued research into the area of auditory hallucinations is evident, although this research does not provide clear directions as to how this should progress. Whilst it was not possible to fully explore the role of self-evaluations and personal meanings in this research, it is a factor which potentially relates to problems within the methodology as opposed to the lack of importance of self evaluations and personal meaning.

Suggestions for improvements in the methodology have been discussed and include: improvements in operationalising the methodology used by clarifying specific definitions and prompting. Wider replication would be advantageous, given the differences between the two samples. Problems within the sampling have been detailed earlier. Clearly, the vulnerability and variability of the client group restricts the possibility of researching a purely random selection and biases will always exist.

To further explore the role of self-esteem and personal meaning in the affective responses may require seeking out people who do not have a negative affective response to voices. It is known that voices do not always elicit a negative affective response (Romme & Esher, 1989) and it may be necessary to look for

people with a positive affective response outside of those with psychosis. Another possibility is to explore these methods through clinical case studies and such approaches are currently being used in clinical work (see Chadwick *et al.*, 1996). Researchers and clinicians are increasingly recognising the potential role of self-esteem (Bentall *et al.*, 1994) and using thought chaining to access negative self-evaluations (Chadwick *et al.*, 1996) in the therapeutic forum.

A final issue is the importance of disseminating the information that has been obtained from this research, to both allow for the development of research into this area and, more importantly, to acknowledge the potential extent of distress which voices can cause.

#### 4.8 MAIN CONCLUSIONS

The present study has sought to collect data on the cognitive assessment of the voices of people with psychoses, replicating previous research, testing its reliability and extending the research to explore the role of self-evaluations and personal meaning and their associations with the affective response. The main conclusions from this research as follows:

- (i) It was possible to meet the first three aims of the study, but the preponderance of negative affective responses did not allow for a full examination of the relationship between personal meanings, self-evaluations and affective responses.
- (ii) Although the content, purpose, and personal meaning of voices were largely negative, this was not a prerequisite to the predominantly negative affective responses to voices for participants in this study.
- (iii) Claims from the research of Chadwick & Birchwood (1994) concerning the importance of beliefs about voices and the perceived omnipotence and omniscience of voices have not been substantiated in this research.

(iv) The cognitive assessment of voices shows reasonable inter-rater and test re-test reliability, but future research in this area would benefit from operationalising definitions and specifying the amount of prompting required to elicit participants beliefs.

(v) The dilemma of the inadequacies of psychological treatments for voices ought not to deter researchers and clinicians from continuing to offer and develop services for this client group, giving clients the opportunity to discuss difficulties (concerning voices) in a therapeutic environment, whilst continuing the endeavour to understand the important determinants in the affective responses for those who encounter voices.

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